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NEO-BABYLONIAN SOCIETY AND ECONOMY

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With the establishment of the Neo-Babylonian kingdom there starts a rich flow of documentary sources. The period of less than ninety years between the reign of Nabopolassar and the occupation of Mesopotamia by the Persians is documented by tens of thousands of texts concerning household and administrative economy and private law, over ten thousand of which have been published so far.¹ Their content is varied: promissory notes, contracts for the sale, lease or gift of land, houses or other property, for the hiring of slaves and freemen, documents connected with international and internal trade, records of lawsuits, correspondence concerning official business, letters with family news, and so on. All these texts come from temple and private archives. We have no state archives of Neo-Babylonian times at our disposal apart from a few stray texts. The rich material in the Neo-Babylonian sources has unfortunately still been insufficiently investigated. It is therefore impossible as yet to give a complete description of Neo-Babylonian society.

I. THE SOCIAL STRUCTURE OF NEO-BABYLONIAN SOCIETY

At the time when the Neo-Babylonian state came into being the inhabitants of some large Babylonian cities enjoyed special privileges. Only the fear of losing their civic privileges can explain why citizens of some cities (such as Nippur) remained faithful, in spite of great suffering and privation, to the Assyrian rulers under whom they had won these privileges, and fought the armies of Nabopolassar, the founder of the Neo-Babylonian kingdom. As we have seen, the citizens of Babylonian cities were exempt from military conscription and corvée. A characteristic feature of these cities was self-rule by free and legally equal members of society united in a popular assembly (*puḫru*) around the principal temple of the city. The texts mention 'the assembly of the country' (probably consisting of the managers of temple estates in various cities),

¹ See for a brief survey of these sources A 815, 6–12.

'the assembly of the people' (or possibly of the army), assemblies of Babylon, Uruk, Nippur, Sippar and other cities.²

Despite this, after the establishment of the Neo-Babylonian kingdom, the centuries-long struggle between royal power and the people's assemblies had gradually resulted in the defeat of the latter; by that time their jurisdiction extended only to private disputes among their citizens and crimes of local importance. What is remarkable, however, is that the numerous inscriptions of the Neo-Babylonian kings tell only of the erection of new temples and repairs to old ones, and of pious gifts to various sanctuaries, while the many successful military campaigns are hardly ever mentioned. This points to the fact that the rulers were obliged to take account above all of the clergy, who played an important part in the people's assemblies and represented their interests.

As can be seen from the inscriptions of Nabonidus, the last king of the Neo-Babylonian dynasty, conflicts continued between the central power and the citizens of Babylon, Borsippa, Nippur, Uruk, and Larsa. Relations with them had been sufficiently strained from the very beginning of his reign, when Nabonidus started to give pride of place to the cult of Sin, the moon-god, naming him 'divine king over all gods'. In fact the moon-god whom Nabonidus worshipped was not the traditional god Sin of Ur, but according to his symbols and forms of worship, an Aramaean god. It is possible that by bringing about his religious reforms, Nabonidus strove to unite around himself the numerous Aramaean tribes of the Near East which worshipped Sin.³

However, the opponents of Nabonidus were not united among themselves and each city endeavoured to give pride of place to the cult of its own god. According to Nabonidus the people had wandered off the true path, had told lies, had sinned against the gods and had even begun to 'devour one another like dogs'. One Neo-Babylonian inscription says that judges took bribes and did not defend the poor, that the strong robbed the weak, usurers exacted high interest, the mighty victimized the disabled and widows, many broke into other people's homes and seized their fields. The text goes on to say that the new king had put an end to this lawlessness and had established a just order. The name of the king does not occur in the preserved part of the inscription, but in all probability he was Nabonidus.⁴

Even Nabonidus, however, was to a certain extent forced to take the traditional rights of the citizens into account. Thus he declares in one of his inscriptions that he had 'gathered the elders of the city, citizens of Babylon', in order to take counsel with them about temple-building.⁵ In

² A 980, 45-9; A 981, 38-41.

³ For sources and literature on the religious activity of Nabonidus see A 889.

⁴ For the publication of the text see A 854; see also A 902. ⁵ See A 856, 254-6.

connexion with the consecration of his daughter to the temple of Egishnugal in Ur, Nabonidus exempted this temple of the god Sin from state services and granted it special privileges;⁶ however, this decree, like all similar royal decrees, did not affect all the inhabitants of Ur, but only the narrow group of priests and temple staff.

Some of the decisions of the 'people's assembly' concerned thefts of temple cattle and of other property, the collection of tithes and payments for the lease of temple fields. Other decisions related to litigation and the family disputes of individual citizens. Let us dwell briefly on the functions of the 'people's assembly'.

In the year 545 B.C. in Uruk, a woman declared in the assembly that her husband had died, famine reigned in the country, and she was unable to feed her two small sons, so she was handing them over to the temple of Eanna as slaves of the temple (*širku*).⁷ In 540 B.C., also in Uruk, a certain Ibni-Ishtar, in the presence of several people near the temple of Eanna, threw himself dagger in hand at the royal commissioner (*rēš šarri*) of that temple. The assembly examined the case and 'tied up and sealed the iron dagger which he had pulled out of his belt'.⁸ The document does not give the assembly's decision, because in this case the passing of the sentence came under the jurisdiction of the king's tribunal, while the assembly's role was limited to preliminary investigations; but it does represent a record of the depositions of witnesses and of the attaching of material evidence. In the same town of Uruk the king's commissioner at the temple of Eanna informed the assembly of an important deficiency in the amount of barley due as rent repayment for 553 B.C. The assembly had to establish who was responsible.⁹

In 591 'the assembly of the elders' of Sippar examined a case of the theft of property of the temple of Ebabbar by a certain man and came to the decision that, if the accusation was proved against him, he would have to make good thirty-fold the loss occasioned to the temple.¹⁰

When in Babylon in 555 litigation arose between three brothers about the inheritance of a field which was part of their mother's dowry, the verdict was given by the 'elders of the city'.¹¹ Similarly in 590 the 'elders of Nippur' examined a suit between two persons over a slave girl.¹² In 594 in Borsippa 'at the assembly of the people' (or possibly of the army, *puhur ummāni*), Nebuchadrezzar denounced one of his generals for plotting against him. The criminal was executed and all his property confiscated. The document concerning the execution was composed in the presence of numerous people, including the civil governor of the city of Borsippa.¹³

⁶ See A 801A.

⁷ A 1010, 33.

⁸ See A 565, no. 117.

⁹ A 817, no. 78.

¹⁰ A 907, no. 104.

¹¹ See for reference A 981, 38.

¹² A 981, 38-9.

¹³ A 924, 1-5.

Thus the assembly functioned as an organ of local self-government and justice. Its sessions were often presided over by the royal governor of the city concerned and the temple administrator.

Documents from Uruk contain frequent mentions of the 'assembly of the citizens of Babylon and Uruk'. Here the term 'Babylonians' designates state employees (scribes and other representatives of the central authority), who had been sent from Babylon by the royal administration for service in Uruk.

The members of the popular assembly were citizens (*mār banī*) who were free and in the eyes of the law equal among themselves. But they differed noticeably among themselves in economic and social standing. Among them were governors of cities, judges, high-ranking state and temple officials, merchants, businessmen, scribes, lesser officials, shepherds, lessees of fields, and artisans (who included the poorest strata of the free population). The status of the citizens was inheritable and passed on from father to sons. Naturally an active role in the work of the assembly was taken only by the wealthy.¹⁴

Quite often when decisions were to be taken in a case, only the elders (*šībūtu*) gathered together, as being the most influential citizens. In a number of cases their decisions were taken jointly with the senior temple officials and governors of cities. Sometimes documents containing orders from high state officials were drawn up in the presence of elders. The elders also represented the citizens of their cities before the king.¹⁵

The citizens took part in the cult at the local temple, as well as in the temple festivals and repasts, and were entitled to receive specific parts of the temple's revenue. All these people lived in the city and owned land in the city or in the rural district over which the power of the people's assembly extended.

Not all freemen, however, were citizens. Manumitted slaves, for instance, although free, could not obtain the status of full citizenship, as they were not allowed to occupy posts linked to the reception of the temple prebends. Aliens too were deprived of the rights of full citizenship.

At the time under study the population of Babylonia was ethnically mixed. The country was abundantly populated by Chaldaean and Aramaean tribes living side by side with the old local inhabitants, whom they gradually assimilated. Many aliens also lived in Babylonia. These were often settled in considerable groups in specified regions. Thus in the environs of Nippur and in the city itself each ethnic group was assigned a particular territory. Among aliens there were also the king's mercenaries, voluntary immigrants, and people who for various reasons

¹⁴ A 980, 45-8.

¹⁵ A 981, 39-40.

lived permanently or temporarily in Babylonia (merchants, political refugees, seasonal hired workers from Elam, and so on). Thus Babylonian texts mention numerous aliens living at the court of Nebuchadnezzar. Among them were Elamites, Persians, Cilicians, Jews, various emigrants from Asia Minor ('Ionians'), 'fugitives from Media', and others. It can be noted incidentally that a letter of the early sixth century B.C. mentions the arrest of several Babylonians whose father and brother had fled to Media. As can be seen from the same letter, several other Babylonians had fled to Media, and the king's order for them to return remained unanswered.¹⁶

Particularly numerous were people of Egyptian extraction, whose ethnic origin is often mentioned in the texts. In other cases it is easily established from proper names, which are frequently theophoric and have reference to such gods as Amun, Isis, Horus and Hapi. The Babylonian scribes knew about the theophoric character of these names, and usually set before them the divine determinative. A considerable number of Egyptians are mentioned as contracting parties and witnesses to a variety of contracts made in Babylon, Ur, Uruk, Sippar, Borsippa, and other cities. Thus Egyptians were scattered all over the country. The majority of Egyptian settlers, as a result of mixed marriages and in an attempt to adjust themselves to the surrounding ethnic milieu, gradually began to give their children Babylonian names and to assimilate themselves with the local population. In such cases the ethnic term 'Egyptian' (*miširāja*) was retained by their descendants as a family name. It is a curious fact that among the considerable number of aliens living at that time in Babylonia, only persons of Egyptian origin are frequently mentioned as scribes of cuneiform tablets. Assyrian texts of the times immediately preceding the establishing of the Neo-Babylonian kingdom mention Egyptian healers, farriers, interpreters of dreams, singers, jewellers, smiths, brewers, bakers, and so on. It is obvious that after the Neo-Babylonian kingdom was established, the majority of these people did not return to their homeland but remained to live in Mesopotamia.¹⁷

Private law documents show that representatives of different nations lived side by side, formed business relationships, and concluded mixed marriages. It is essential to keep in mind that in ancient times there were no conflicts on ethnological grounds, no racial hostility or feeling of superiority of one nation over another, and no one country was interested in imposing its language and culture on other nations. For this reason there was no disparaging of the beliefs of aliens by the local population. The aliens for their part worshipped not only their own gods but also the gods of the people among whom they lived, believing as they

¹⁶ A 999, 134-5.

¹⁷ A 997.

did in the power of these gods. Aliens took part in the economic and social life of the country, and became owners of houses and estates, while some of them served in administrative positions. They gradually became assimilated with the local population and spoke Akkadian and Aramaic (since Aramaic spread swiftly as the colloquial language in Mesopotamia), and in their turn exercised a definite cultural influence on the Babylonians.¹⁸

Aliens enjoyed no civic rights since they did not possess land within the city's common fund and therefore could not become members of the people's assembly. But in cases where they were compactly settled in distinct regions such people could create their own organization of local self-government – a people's assembly under the guidance of their own elders. We know in early Achaemenid times of the 'assembly of Egyptian elders' which functioned in Babylon. But such self-governing organs of ethnic minorities had probably already existed during the period of the Neo-Babylonian kingdom. It is known from the Bible that the Jews driven into captivity in Babylonia under Nebuchadrezzar had their own elders, who took decisions on problems of the internal self-government of the Jewish colonies, which preserved their own ethnic consciousness and traditional culture.¹⁹

Finally, besides citizens and freemen without civic rights, there existed several groups of dependent populations in which slaves formed a particular intermediate category. All these people naturally had no civic rights.

II. THE LAW

Justice was administered not only by the people's assembly, but also by the king's judges. The king's tribunal consisted usually of a council of five or six professional judges. Sometimes the composition of the tribunal was mixed and consisted of king's judges and elders selected from among the citizens. In Sippar the king's tribunal was presided over by the high priest of the temple of Ebabbar, who enjoyed full judicial power. In making decisions on important matters the people's assembly was subordinated to the king's judges, from whom they received various instructions, and to whom they were obliged to convey all necessary information. The king's tribunals took the decisions on the most important cases, in particular those of murder, plots, and revolts.²⁰

The king appears to have been regarded as the highest judicial authority; but he did not possess absolute power and could not arbitrarily seize the property of his subjects or deprive them of life. In his

¹⁸ See for references A 999, 139–40.

¹⁹ See for references A 999, 143–5.

²⁰ See A 893, 37.

private life the individual was left to himself, and as in former times the central authority did not interfere in his family life. He could move freely within the limits of the kingdom, undertaking business and commercial trips, or travel in search of earnings.

Marriage was generally monogamous, and a man who took a second wife was usually obliged to pay high compensation to the first wife, unless she was childless. A woman enjoyed a comparative independence; she could hold her own property and deal freely with it (give it away, sell, exchange or lease it), as long as it did not cause loss to her children and husband. On the husband's death the widow, even if she had no children, was allotted a part of the husband's property. Although women often acted as contracting parties, they are nevertheless very rarely mentioned as witnesses in contracts.²¹

Neo-Babylonian law apparently encouraged a written formulation of contracts except for the sale of perishable goods. Contracts were drawn up by professional scribes in the presence of witnesses (usually from three to ten or more) in two copies, each of the two parties receiving one. From the beginning of Neo-Babylonian times it is stressed in documents that the parties are concluding the deal of their own good will. The contracts enumerate the conditions of the business agreement, the place and date where and when the document was drawn up, and a penalty is defined (usually a fine) for a breach of conditions. Seals of witnesses and of the contracting parties are added (the latter usually leaving the impression of their thumbnails, especially if they are debtors).

In the period under study objects given in pledge were fields, houses, slaves, children of freemen, cattle, money, and other movable property. There were two kinds of pledge. According to the first kind, property was declared to be a pledge as security for a loan either with the creditor having right of ownership of that property ('hand pledge') or else without that right, when the property remained at the debtor's disposal (*hypothèque*). But the second kind of pledge was most common, in which the property became subject to *antichresis*, that is, the creditor was given the right to exploit the pledge in his own interest.

Slaves and houses were frequently (fields and other property less often) handed over in *antichresis* as pledges for debts. In such cases the revenue from the pledged property or from the labour of slaves or other pledged persons went to cover the interest on the loan. Documents note that the creditor shall not pay wages for the labour of slaves or members of the debtor's family (nor, for example, pay rent for houses), while the debtor remains exempt from paying interest during the time that the creditor makes use of the pledged person or of the immovable property. The debtor could take back his slave, the member of his family, or any

²¹ See A 977.

other property pledged in *antichresis*, only after the creditor had been repayed his loan in full. If a pledged individual ran away, fell ill, or for some other reason did not fulfil his task, the debtor was obliged to refund the creditor with the equivalent of the labour services of the person pledged in *antichresis* throughout the whole time for which the latter did not work – usually to the amount of six litres of barley a day, which in terms of money amounted to twelve shekels of silver a year. In addition the debtor fed and clothed the labourer given over in *antichresis* throughout the time that the latter remained with the creditor.

Usually in the case of *antichresis* no date for the repayment of the debt was specified, and more often than not the pledged person worked for the creditor for several years until the debt was paid in full. When property was pledged without the creditor's right to make use of it, the date of redemption was always indicated. If the debtor did not redeem his debt on the agreed date and the creditor did not grant him more time, the pledge became the creditor's property. But if the value of the pledged property exceeded the sum of the loan, the creditor, on the tribunal's decision, received only a part of the pledge; and contrariwise, if the pledge was judged to be of lesser value than the loan the debtor was obliged to pay up in full.

In Neo-Babylonian times loans were usually made at 20 per cent yearly interest (1 shekel of silver per mina per month), although now, by contrast with the Old Babylonian period, the law did not regulate the amount of interest. Loans were mostly made in money, less often in grain or dates. But during this period wide use began to be made of so-called abstract promissory notes, usually for a loan but in many cases for credit for opening trade workshops, sale of commodities on credit, and so on.²²

Towards Neo-Babylonian times debt bondage underwent considerable changes. A creditor could arrest an insolvent debtor and hold him in a debtors' prison. However he could not sell his debtor into slavery, and the latter would redeem his debt by unpaid labour for the creditor. Contrary to the practice of earlier periods a husband could not pledge his wife as security. Freeman had the right to pledge their children but such pledges, after the debt and interest had been paid in full by their labour, recovered complete freedom from the creditor. In the case of a debtor's insolvency his children could be taken into slavery. Moreover by this date the time limit on slavery, established by Hammurabi's laws in the second millennium B.C., was no longer in force. The explanation may be that during that period, owing to a comparatively high standard of living and to the possibility of earning money as hired labour, there was no longer any threat of a mass enslaving of the free.

The practice of self-pledging and self-selling had completely disap-

²² A 878, 52ff and 111ff.

peared at the time under study. Freeman only very seldom had recourse to the sale of their children and that only in cases of catastrophic famine, devastating wars, or prolonged sieges. For instance in the year 626 B.C., while the army of Nabopolassar was besieging Nippur, which remained faithful to the Assyrians, and while barley cost almost thirty times more than its usual price, some of the population sold their children to money-lenders. It is stated in the contracts that the children had been sold to save them from starvation.²³

In Neo-Babylonian times Hammurabi's laws were still copied and studied, as witnessed by the great number of copies made in the first millennium B.C. At least one of the articles of these laws, decreeing a thirty-fold repayment of stolen temple and palace property, was still in force.²⁴

Three columns of laws have been preserved which, judging by the writing, grammatical forms, vocabulary, and matters discussed, belong to Neo-Babylonian times. In the text that survives, the beginning and end are destroyed. We can infer from its careless script and numerous clerical errors that this is a part of the text of the laws copied for teaching purposes. The laws are not set out in full but selected according to different subjects. The preserved articles concern mostly marriage and property laws. They contain various juridical conclusions with regard to disputable cases of day-to-day life. One law states that if a man builds a cistern to store water but does not sufficiently reinforce its walls and as a result his neighbour's field is flooded, the culprit must pay his neighbour compensation, calculated by reference to the harvest gathered from the adjacent fields. According to another law, if someone sells a girl-slave and she turns out to belong to someone else and her legal owner reclaims her, the seller is obliged to return to the buyer her price plus half a shekel of silver for the child she may have borne in the meantime, in order to compensate her owner for loss during her temporary inability to work.

If a man takes a second wife and has sons by both wives, after his death the sons of the first wife should receive two-thirds and the sons of the second one-third of the deceased's property. If a father gives a dowry to his daughter and she dies childless, this property must be returned to her father's house. After the death of the husband his widow, if she has had no children, receives her dowry and her husband's wedding gift. If a widow who has children wishes to marry again she can take with her her dowry and the gift received from her husband at her first marriage. If she bears children from her new marriage, her dowry must be equally divided between the sons of both marriages, while the gifts received from each husband must be given to their respective children.²⁵

²³ See A 815, 157-80.

²⁴ A 994.

²⁵ A 822; A 989; A 995.

III. THE PALACE AND THE TEMPLES

In Neo-Babylonian times the royal economy weighed less in the general economy of the country; the leading role belonged to the temples and private households. There seems however to have been no clear-cut distinction between palace and state property; therefore all state revenue as well as that from royal estates, in the narrow sense, was regarded as belonging to the king. What was actually in his possession was only a comparatively negligible land fund, the management of which was based on the principles of a private household. Royal property is seldom mentioned in documents. For instance, according to a contract of the time of Nebuchadrezzar II a royal field was let on lease 'for ever' (for planting with date palms) to Shula, head of the business house of Egibi in Babylon. During the reign of Neriglissar a private citizen's house was sold to the palace. A text dated from the reign of Nabonidus mentions ducks as 'royal property'.²⁶

Although we have no information on the workshops of the Neo-Babylonian kings, texts frequently mention royal carpenters, stonemasons, fishermen and shepherds, all of whom were probably freemen permanently employed by the palace. The building and upkeep of canals, palaces and temples, and the making of roads were tasks carried out by freemen as community and state services. It is worthy of mention that their patronymics are regularly recorded in documents, by contrast with slaves, whose fathers' names are not recorded.

The major part of the state revenues came from taxes, of the character and size of which we know nothing. Apparently all freemen were bound to give a tithe of their income in state tax. These taxes were usually paid in kind (cattle, grain, wool, and so on), but official experts established their value in silver. Besides this, certain groups of the population (such as merchants engaged in international trade) paid their taxes in silver. In addition to taxes the king received various tolls and dues (including port dues, city gate toll, canal dues from ships and boats, toll for the use of certain bridges) in silver or in kind. Out of the taxes the king maintained the official staff and the army. The country was divided into administrative districts governed by governors (*bēl pihāti*). Cities were administered by special governors (*bēl ʔēmi*). There were also overseers of royal canals and moorings and other lesser functionaries. The palace management was headed by the 'palace administrator' and included a large number of court employees and messengers.

Naturally the administrative service, branching out over the territory of an enormous realm, could not function without a large number of

²⁶ See for references A 815, 558-60.

scribes. Apparently already the state chancellery was carrying on its correspondence, at least in part, in Aramaic; this undoubtedly explains why the archives of the Neo-Babylonian kings have not come down to us, as documents written on leather and papyrus easily deteriorated in the climatic conditions of Mesopotamia. But an important role in the administrative services continued to be played by cuneiform scribes, some of whom bore the title of 'royal' or 'palace scribes'. Texts also mention 'scribes whom the king appointed to the city', 'port scribes' and so forth. A considerable number of scribes worked for governors in provincial administration. Of great importance among the administrative staff were the scribe-interpreters (*sepīru*), as in building works and in the army craftsmen and soldiers from foreign countries were employed. The entire staff of the state administration received their salaries from the king in kind, the higher ranks also partly in silver.

The mainstay of the king's power was the army, about the recruiting of which we scarcely know anything. Besides Babylonians there were also mercenaries serving in it as evidenced by Antimenidas, the brother of the Aeolian poet Alcaeus, who served in the army of Nebuchadrezzar. The soldiers were armed with spears, iron daggers, shields, bows and arrows. As can be seen from documents of the times of Nebuchadrezzar and Nabonidus, Scythian archers' tactics exerted a considerable influence on the arming of Babylonian warriors, who preferred Scythian to Akkadian bows and arrows because of their high ballistic qualities.²⁷

Close links existed between the palace and the temples: some high temple officials were related to the king. Thus the administrator (*šatammu*) of the temple of Ezida in Borsippa was married to the daughter of Neriglissar. The temples of Esagila in Babylon, Eanna in Uruk, Ebabbar in Sippar, Ezida in Borsippa, E-imbi-Anu in Dilbat, Ekur in Nippur, Egishnugal in Ur, and Emeslam in Cutha were the most important temples of the time, and they also advanced loans and transacted commercial business. Thus Eanna owned some 5 to 7 thousand head of large horned cattle and 100 to 150 thousand sheep. According to one document this temple obtained during one year, 5,000 kg of wool from its sheep.²⁸

An important source of temple revenue was the tithe. It was collected from all the representatives of the free population: agricultural labourers, shepherds, gardeners, artisans, priests and officials of all ranks, including governors. The king also paid the tithe to all important temples in the country at the same time. Everybody else paid the tithe to the temple near which they possessed land or other sources of income. It was paid on gardens and fields, on the increase of cattle, on the yield of

²⁷ See for references A 998, 99–106.

²⁸ See for references A 979.

wool, and so on. In most cases it was paid in the form of barley and dates, but quite often in silver, sesame, wool, clothing, cattle, fish, or artefacts. The king paid partly in gold. The tithe represented more or less a tenth part of the payer's income, though the king's tithe was relatively smaller. Special officials were engaged in collecting the tithe. Some people, unable to pay, had to borrow money from usurers pledging their houses and fields and sometimes even giving their children to the temple as slaves (*širku*).²⁹

The structure of temple management is best known from data contained in the archive of Eanna. The senior administration of this sanctuary consisted of the king's governor (*bēl tēmi*) in Uruk, the estate manager of the temple (*qēpu*), the head of the temple's administrative council (*šatammu*), and 'Eanna's scribe'. The last three managed the temple's estates, supervised the temple slaves, and organized the allocation of the temple revenues to various purposes. Thus their functions were of an administrative, not religious, character. All the higher temple functionaries, except the governor of the city who was appointed by the king, were elected from among the citizens, apparently at a session of the people's assembly at the Eanna temple. A more or less similar system prevailed in other important temples in the country.

As the business correspondence of the temples was conducted for the greater part (if not entirely) on clay tablets, cuneiform scribes were indispensable. Thus in Eanna there worked simultaneously no less than twenty scribes, and a similar number would have been employed in other important temples. But not all of them were permanently occupied in writing; a temple scribe was primarily an employee of the administrative and economic system and his duties included establishing the amount of land rent, arranging the provision of cattle and other produce for sacrifices, issuing rations to the temple slaves, supervising all kinds of labour, and recovering debts from temple debtors. Many scribes fulfilled the functions of accountants. Besides this scribes were sent out to various regions subjected to the temples. Thus a letter from the archive of Eanna says that in case of an insufficiency of scribes in some particular place others would be sent there. Many scribes of Eanna made business trips to Babylon, Larsa, and other cities, including even the Phoenician city of Tyre. The majority of scribes worked in the temples for long periods (some for thirty to forty years or more) and this service was their main source of income. They received their pay in barley and dates (usually from 180 to 270 litres a month, sometimes up to 540 litres). Senior temple officials were often chosen from their number.³⁰

Under Nabonidus the influence of the state over the temples gained in

²⁹ See A 1007.

³⁰ See A 982, 85-96.

strength. In particular, in 558 Nabonidus created in the Eanna temple the post of royal commissioner, whose functions to some extent had previously been carried out by 'Eanna's scribe'. The latter title now lost its importance and was held by all scribes of the temple.³¹ The royal commissioner was independent of the temple, and one of his main duties was to hand over to the palace part of the temple's revenues. For this purpose a special 'king's chest' was created which received a specified part of the revenue in kind. In addition the temples had to contribute to state services by sending their slaves as farmers, shepherds, gardeners, or carpenters to work in the king's household.

The king and his staff began to interfere actively in temple matters, establishing rations for the temple slaves, the size of the temple prebend for various groups of the population, and rates of rental for temple fields.³²

IV. BASIC BRANCHES OF THE ECONOMY

All cultivated land was exactly surveyed, as witness a large number of cadastre texts. A considerable part of it belonged to the temples, to members of the royal family, to important business houses, or to officials of the royal and temple administration. Small land-holders (especially in large cities) owned holdings from half a hectare to several hectares. Land was highly priced, making it more profitable to use it for gardens (mainly for date-palm plantations) than for cereal cultivation.

Barley was the most widely cultivated cereal but spelt, wheat, sesame, peas, and flax were also sown. The density of barley sowing averaged 133.3 litres per hectare; the yield varied from 935 to 4,050 litres per hectare, but averaged 1,890 litres. The crop was harvested from the end of April until the end of June. Dates equalled barley as a main food item and the average yield of dates from a hectare of garden was 8,820 litres. Young palm trees began to bear fruit in the sixth year after planting.³³

Rainfall was scarce, and irrigation continued to play an important part in the country's economy; new canals were dug and old ones maintained in exemplary order. These canals belonged to the state, to temples and in some cases to private individuals, but all land-owners and leaseholders could make use of their water for a fee. Silt from the canals was used as a fertilizer together with manure.

Smallholders cultivated their fields themselves with the help of members of the family, and sometimes also with the help of labourers usually hired for the harvesting period. Owners of large estates let out their land on lease. The rent was usually either established in advance

³¹ A 988, 108-10.

³² A 979.

³³ A 1005.

when the contract was made and depended on the presumed fertility of the land, the rent being paid in kind, or much less frequently in cash (*sūtu*); or else it was assessed in arrears on the estimate of the standing crops (*imittu*). Usually the owner of the land received one-third of the crop and the lessee two-thirds. In most cases the contract was drawn up for one year, but if the land had been lying fallow it lasted for three years. For such land the lessee paid the owner nothing during the first year, in the second year only part of the usual rental, and in the third year the share of the crop normal for that province. Quite often extensive tracts of land were leased to head-lessees, who in their turn parcelled them out among sub-lessees. It also happened that two or more lessees rented land in common.³⁴

If Babylonian texts composed after the occupation of Mesopotamia by the Persians are to be trusted, during the reign of Nabonidus famine decimated the population. But these texts, being composed to please the Persian king Cyrus, demand critical evaluation. Nabonidus in his own inscriptions asserts that during his reign Babylonia flourished. Some 3,000 economic and private legal documents in his time testify to the country's continuing economic prosperity, and the version of later Babylonian texts is obviously tendentious in representing him as having ruined his people. It is true that a document survives showing that in the year 544 famine reigned in the country. This information agrees with an official inscription of Nabonidus which says that after a drought and famine rains had come bringing plenty, and 234 *qû* (about 230 litres) of barley or 270 *qû* (about 270 litres) of dates cost one shekel, which is approximately one-third less than the normal price.³⁵

Side by side with agriculture the most important branch of production was handicraft. Neo-Babylonian texts mention weavers, smiths, jewellers, house-builders, coppersmiths, carpenters, launderers, bakers, brewers, and other craftsmen. A craft was usually passed on within families from father to son. However no law required a man to inherit his father's profession. Rather it was a tradition which was often broken.

There existed in Babylonia no independent craft organization because the economic premises necessitating its creation did not yet exist, namely a market economy and the possibility for craftsmen to dispose freely of raw materials in any considerable quantity. To judge by documents of the archive of the temple of Eanna, craftsmen in Uruk, although in most cases freemen, worked for that temple and received from it their raw materials. They worked for the temple by voluntary agreement, and were remunerated in cash and in kind. Besides this some craftsmen (such as bakers and brewers) worked for the temple for a stipulated period each

³⁴ A 1022, 8ff.

³⁵ A 886, 247-8.

year in return for the revenue paid to persons entitled to a temple prebend.

According to documents from Babylon, Nippur, and some other cities, craftsmen often contracted with clients for the manufacture of furniture, household utensils, or clothing, using either their own or the client's materials. Some craftsmen may have worked for the open market, but on this we do not possess sufficient information.

Some people sent their slaves to learn a craft because a qualified craftsman brought his master a much larger revenue than would an unskilled slave. Contracts have survived for teaching slaves such crafts as leather-dressing, shoe-making, weaving, dyeing, carpentry, and house-building. All these contracts concern male slaves sent for training. Their age is not stated but it may be confidently assumed that they were youngsters. The craft masters too were often slaves. The training lasted from 15 months to 6-8 years, according to the complexity of the craft, and during all that time the apprentice remained with the craft master. His owner was responsible for his keep, providing him with about a litre of barley a day and with clothing, so long as he remained with the craft master. The latter was remunerated by the slave's labour and, in addition, at the end of successful training, received a present from the slave's owner. But if the craft master did not fulfil his undertaking and had not taught the slave the full measure of his craft, he was required to pay back to the slave's owner the value of the slave's labour for the entire period of training, usually about 6 litres of barley a day, which for one year represented in cash terms 12 shekels of silver.

After the completion of his training the slave either worked for his owner or remained with the craft master, who paid his hire. Sometimes such a slave opened his own workshop paying his master quit-rent.

In practice, however, only the wealthy could send their slaves for training, because during apprenticeship the owner not only had no profit from the slave but also had to provide for his keep. Therefore those who owned only a few slaves could not afford to have them trained in a craft with the prospect of drawing advantage from it only in several years' time.³⁶

V. COMPULSORY AND FREE LABOUR

The greater part of the dependent population belonged to the estate of farm labourers (*ikkaru*). They owned no land of their own and laboured from one generation to the next on land belonging to the state, the temples, and private land-owners. Such labourers lived in rural districts

which did not possess the characteristic structure of urban self-government. In the eyes of the law *ikkaru* were not considered as slaves; they lived with their families and could not be sold. Nevertheless, they were attached to the land and could not leave their place of residence without the permission of the owner. If they ran away, they were caught, shackled and brought back. These labourers worked all the year round under the supervision of their masters or the latter's agents. Lists have survived in temple archives with detailed enumerations of dozens, and sometimes several hundreds, of labourers in each separate document. In these enumerations they are split into small groups of three or four, mostly representing separate families, each consisting of a father and his sons.

The *ikkaru* received from the temple administration oxen, ploughs, shovels, seed for sowing, and quite frequently supplies of food for themselves and fodder for the cattle. When agricultural labour was over, the *ikkaru* returned the cattle to the temple. Temple officials made periodical inspections of the livestock and tools and of the seed-corn held by the *ikkaru*.³⁷

The temples of Eanna and Ebabbar in Uruk and Sippar farmed out considerable tracts of land to rent collectors, the amount being established at the conclusion of the contract. The collector did not himself cultivate the land but passed it on to sub-lessees and was responsible to the temple administration for the yearly supply of a pre-determined quantity of farm produce. At the same time the temples quite often lent their *ikkaru* for hire to rent collectors together with the leased land, farming implements, and draught animals, passing on to them the *ikkaru*'s rations. The rent collectors were held responsible for the good state of the livestock and tools, and for the *ikkaru*. The latter were in their turn responsible to the rent collectors for the crops of that part of the land which they themselves cultivated. Customarily the temple supplied a quantity of draught animals and *ikkaru* corresponding to the area of land leased. Thus, according to a contract drawn up in the year 55 B.C. in Larsa, the Eanna temple leased to two men 7,410 hectares of land. In the first year of the lease the rent collectors received from the temple 3,000 *kur* (540,000 litres) of barley for sowing and 10 talents (300 kg) of iron for ploughshares. Besides this they received 400 *ikkaru*, 400 oxen, and 100 'large' cows to replace oxen that were worn out. As rent they were required to supply the temple yearly with 25,000 *kur* (4.5 m litres) of best quality barley and 10,000 *kur* (1.8 m litres) of choice dates.³⁸ Thus for each 18.5 hectares of land the rent collectors had at their disposal one *ikkaru* and one ox. But according to the conditions of the contract the

³⁷ A 815, 590-625.

³⁸ A 1005, 90-104.

leased land was to be cultivated in alternate years, half of it remaining fallow in each year. As only half of the land was cultivated at one time, on average some 9 hectares was the *ikkaru*'s share; but so much land could hardly be cultivated by one man. Obviously the rent collectors were obliged to hire sub-leaseholders (calculating approximately 4 hectares for each man) and also add the necessary number of oxen and quantity of seed-corn. In other words, in this particular case the rent-collectors probably had recourse to the labour of some 500 free leaseholders in addition to the 400 *ikkaru*.

According to another contract drawn up in Uruk in 545 B.C., a rent collector received 812 hectares of ploughland belonging to the temple of Eanna. A thousand *ikkaru* were put at his disposal, 100 oxen, 50 'large' cows, and for the first year of the lease also 625 *kur* (112,500 litres) of barley for sowing and 5 talents 20 minas (160 kg) of iron for ploughshares. The full amount of the lease rent was 5,000 *kur* (900,000 litres) of barley a year. Of particular interest is the statement that 30 out of the 100 *ikkaru* put at the disposal of the lessor by the temple would receive from the temple's stocks by way of provisions for the first year of the lease 120 *kur* (21,600 litres) of barley – 720 litres for each man or approximately 2 litres a day.³⁹

According to a contract concluded by the temple of Ebabbar in Sippar, a man who rented 79 hectares of land also had put at his disposal 12 oxen, 8 *ikkaru*, keep for the latter and fodder for the cattle, grain for sowing and agricultural implements.⁴⁰

The *ikkaru* put at the disposal of rent collectors were obliged to surrender a pre-determined part of the crop from the land allotted to them according to the size and fertility of the field. The rent collector having collected from all the *ikkaru* the crops due from them settled his accounts with the temple. One can cite as an example that one rent collector had during 553 B.C. collected from the *ikkaru* under his control and delivered to the temple of Eanna 10,136 *kur* (1,824,480 litres) of barley.⁴¹

In conquering new territories, or in suppressing rebellions in previously conquered provinces, the Babylonian kings seized the local inhabitants (particularly qualified craftsmen) and enslaved them. Already at the time of Nabopolassar, the founder of the Neo-Babylonian dynasty, intensive building was in progress in Babylonia; this reached impressive proportions under Nebuchadrezzar. The labour of prisoners of war was widely used on such works as canal-digging, road-building and the construction of palaces; the text of Nabonidus' stela found at Harran in upper Mesopotamia says that the gods Marduk and Nergal

³⁹ A 1005, 38–40.

⁴⁰ A 815, 606.

⁴¹ A 1005, 74–6.

granted to him 2,850 prisoners from Humē (Cilicia) to carry bricks during the building of the temple of Sin at Harran. Among the ruins of the royal quarters in Babylon texts were found enumerating the rations of prisoners of war. In these documents, dating from 595 to 570, after the wars with Egypt and the Phoenicians and the capture of Jerusalem, there are mentioned in particular 46 Egyptians and 90 ship-builders from the Phoenician city of Tyre, as well as other qualified craftsmen and Jewish prisoners.⁴²

The kings handed over to temples some of the prisoners of war as slaves. Nabonidus made a simultaneous gift to several temples of 2,850 men deported from other countries. He also handed over many slaves to the temple of Sin in Ur, together with fields, gardens, large horned cattle, and sheep.⁴³ In this connexion one may note that a significant source for the increasing contingents of temple slaves was the consecration to the temples of privately owned slaves by their pious masters.⁴⁴

Nebuchadrezzar brought to the building of Babylonian temples craftsmen 'from the Upper to the Lower sea' – from the Mediterranean to the Persian Gulf – but apparently the majority of these people were able to return home after the completion of their service. As a rule only an insignificant part of the prisoners of war were turned into slaves, distributed among palace, temple, and private households. The majority were settled on state land which they farmed independently, paying state taxes and carrying out services, often including service in the army. At the same time some of these prisoners of war owned their own slaves. Thus in the year 597 B.C. almost ten thousand persons, not counting women and children, mainly belonging to the nobility, warriors, and craftsmen, were taken from Jerusalem to Babylonia. Biblical sources represent this captivity as the bondage of slavery. In reality, however, the captives were not enslaved but settled in specially designated regions, in particular near Nippur, on land that had become neglected.

The question arises why the Babylonian kings did not turn the whole mass of prisoners of war into slaves. Slavery was after all the most effective form of dependence, and there was hardly ever a lack of prisoners of war, nor were there any legal or moral bars to such bondage. However the slave sector in Babylonia, as elsewhere in the ancient Orient, was unable to absorb all the prisoners of war. The reason is to be found in the comparatively low level of economic development and goods-money relations, and in the lack of intensive production methods in which slave labour could be utilized on a large scale. It was the labour of free agriculturists and leaseholders that formed the basis of the rural economy, and in crafts the labour of free craftsmen and relatively few

⁴² A 923.⁴³ For references see A 815, 472.⁴⁴ See A 815, 472–82.

privileged slaves. Slave labour was less effective and needed constant supervision. An average slave sought in every way to avoid the task assigned to him, showed no initiative, and was not interested in the results of his labour or in its quality. It was difficult to establish effective control over slaves, as the basic type of economy was the smallholder's and peasant's household, and there were no large workshops employing slave labour.

The labour of slaves was thus utilized mainly for work which did not demand high qualifications or expensive supervision, work in which slaves could be occupied throughout the year, not seasonally; therefore the more complex processes of production were carried out by freemen. The documents contain hardly any data on the utilization of the labour of privately owned slaves in agriculture, with the exception of cases in which the slaves appear as leaseholders. Major land-owners preferred to deal with free leaseholders, leasing to them small plots of land, because slave labour demanded constant supervising and correspondingly heavy expense. Therefore there were in Babylonia no true *latifundia* except those of the temples, and such large land-ownership as existed relied on small-scale exploitation. When large land-owners had recourse to the help of their own slaves, they either allotted land for independent exploitation on *peculium* rights or more often rented it out to them.⁴⁵

On the fields belonging to the temples there laboured a comparatively large number of slaves, but they cultivated only part of the temple lands, the rest being cultivated partly by *ikkaru* and partly by free leaseholders. Temple administrations also suffered from runaway slaves. It sometimes happened that when slaves took cattle to pasture they would run away and take the cattle with them. The temple management therefore sought mainly to hire free shepherds. The advantage of such economic management was that in cases of theft, outbreak of disease, and other kinds of loss, the shepherds were obliged to make the loss good to the temple out of their own property.

Although the temples and large business houses owned dozens and sometimes hundreds of slaves, and wealthy citizens had from two to five each, they were on the whole far fewer than the population of freemen.

When owners were unable to use slave labour in their household economy or thought it disadvantageous, the slaves were often left to fend for themselves, with the payment of a pre-determined quit-rent from the property (*peculium*) occupied by them. The amount of the quit-rent varied according to the slave's property, but on average it amounted in money terms to 12 shekels of silver a year. The slave himself cost at that time on average about one mina of silver, and a female slave about 50 shekels.⁴⁶

⁴⁵ A 815, 252-78.

⁴⁶ A 815, 181-206.

There were at that time in Babylonia a comparatively large number of slaves living with their families and owning considerable property, which they were free to pledge, lease, or sell. Slaves could also have their own seals, and appear as witnesses at the conclusion of various business deals by freemen or by other slaves. They could go to law among themselves and sue freemen, with the natural exception of their masters. Such slaves could buy other slaves for work in their households as well as hire slaves and freemen. Nevertheless, such slaves could not buy their freedom, because the right to enfranchise belonged in all cases to their masters, and the wealthier the slave the less advantageous it was for his master to give him his freedom.⁴⁷

Although from the legal point of view the freeing of slaves was admissible, documentary data on manumission are extremely rare. The freeing of slaves was limited to cases in which a slave owner in his old age, having no children or not wishing to become dependent on them, sought to interest a slave in the prospect of future freedom and ensure his loyal service to the end of his days. In such cases the freed slave was obliged to supply his late master with food and clothing, and acquired full freedom only after his death. But if a former slave neglected his duty to provide for his master, he could again be reduced to slavery by the destruction of the document of manumission. But for temple slaves, all ways to freedom were closed.⁴⁸

As has been noted above, in Neo-Babylonian times debt bondage was of little importance: and the less debt bondage is developed the greater is the role played by free hired labour in the general structure of the economy. The amount of pay of hired freemen fluctuated from 3 to 12 shekels of silver a year, and in some cases rose to 30 shekels and more, but on the average it was 12 shekels. Boatmen and men employed on earthworks were particularly highly paid, and a large number of texts tell us about the money paid to hired workers who dug or cleared irrigation canals belonging to temples. Several documents mention the issuing of money and provisions (including ale) to hired workers in the household of the Eanna temple occupied in making, baking, and colouring bricks and bringing them to building sites. Shipwrights and shipmasters also worked as hired hands in Eanna while others were occupied in hauling boats, guarding temple property, and other comparable tasks.

By comparison the hiring of slaves was temporary and infrequent. The pay for a slave's labour was equal to that of a free hired hand, but it was received not by him but by his master. Besides, when at times a hired worker found himself in economic difficulties, the hirer was able to dictate his conditions to him. It was therefore more advantageous to hire freemen.

⁴⁷ A 815, 384-97.

⁴⁸ A 815, 438-55.

Although the temples had at their disposal a certain number of slaves trained as craftsmen, there were not enough to satisfy even to a minimal extent the needs of the temple economy. The temple administration was obliged throughout the year to turn to free jewellers, brewers, bakers, tanners, smiths, copper-smiths, carpenters, weavers, launderers and potters. Quite often the temples sought the help of craftsmen from other towns, evidently because their number in the local town was insufficient. Thus a number of documents from the archive of the temple of Ebabbar in Sippar certify the payment to 'craftsmen who have come from Babylon'.

The temple administration was also obliged to have recourse to hired labour to cultivate the land and harvest the crops, attracting men even from the neighbouring country of Elam. Private land-owners were also forced to make wide use of the labour of free hired workers. Where such labour was in short supply, pay would be correspondingly high. Particularly characteristic in this respect are letters from temple officials to their supervisors in which they ask first for money to pay hired labourers who might otherwise abandon their jobs, and secondly for iron fetters to be sent for temple slaves who run away. Hired labourers were interested in the work when they were paid punctually, while the slaves (especially when it was a case of heavy labour such as the construction of irrigation works) did all they could to escape from work.

Parties of hired labourers numbering up to several hundreds were not infrequent. They occasionally refused to work in protest against unpunctual payment of their wages, irregular issuing of victuals, or low pay. The correspondence of temple officials shows that the temple administration understood the necessity of satisfying the demands of hired labourers, for if they refused to work it would be impossible to replace them by temple slaves.⁴⁹

VI. TRADE

Under the Chaldaean kings Babylonia enjoyed economic prosperity. Within the country there was a busy trade between the different cities, carried on mainly by boats along the rivers. In both internal and external trade a prominent role was played by a few powerful business houses. The oldest of these was the Egibi house, which had already begun its activity by the end of the eighth century and continued till the beginning of the fifth century, buying and selling fields, houses, and slaves. The Egibi also carried on banking operations, accepting deposits, issuing and receiving promissory notes, paying the debts of their clients,

⁴⁹ A 982A.

financing and founding commercial enterprises. The Egibi house, like the other Babylonian business houses, did not for the most part finance their operations from credit deposits entrusted to them but worked from their own assets. The depositors of the Egibi house were usually persons already connected with it by common business interests. Some members were also in the king's service (for example, as judges).⁵⁰

Considerable specialization in trade is demonstrated by the fact that the texts mention not only plain *tamkāru* (merchants) but also *tamkāru* of the king and of governors, as well as *tamkāru* engaged in buying and selling cattle and dates. Temples also often had recourse to the services of the *tamkāru*. The king's *tamkāru* dealt in selling goods belonging to the king and carried on usury in the king's interest. Thus, according to a document of the time of Nebuchadrezzar, a king's merchant paid in Babylon a certain quantity of silver out of the 'king's property' for gold. It is noteworthy that the 'chief *tamkāru*' at the court of Nebuchadrezzar was Hanunu, who, judging by his name, was a Phoenician.

However, in Neo-Babylonian times trade could be carried on not only by professional merchants and their agents but also by any private person. Texts frequently mention town merchants who dealt in salt, imported wine, beer, confectionery, crockery, and so on. These vendors carried on a retail trade in the streets and took their wares to the houses of the wealthy. Concerning regularly functioning urban markets we do not possess yet any definite information.⁵¹

Some of the professional traders specialized in international commerce. Babylonia continued to serve as a link in the trade between the Phoenician and Palestinian world to the west and the countries to the south and east of Mesopotamia. Especially lively was the trade with Egypt, Syria, Phoenicia, Elam, Cyprus, and Asia Minor. From Egypt there came to Babylonia large quantities of alum used for bleaching wool and clothing and for medical purposes, and of linen, which was much in demand because of its high quality. From Syria and Phoenicia there came honey, aromatic substances, blue-purple wool, and timber for building. These goods were taken overland to the Euphrates and carried downstream by boat to Babylon, the largest centre of international trade of the times, and from there distributed to the various towns in the countryside. The importing of such wares was carried out by commercial companies specially created to finance trade on a large scale. Each shareholder received in proportion to the sum previously invested by him a share of the profits subsequently realized. From Syria came various substances for dyeing textiles, the production of which flourished at the time in Babylonian towns, which had become important centres for

⁵⁰ A 1028, 39-47.

⁵¹ A 1008, 69-71.

producing woollen clothing. The clothing was exported to neighbouring countries, in particular to Elam. Grain and other agricultural products were also exported from Babylonia. Trade with Greece is attested by quantities of Greek pottery (almost all from Athens) found at Babylon. Iron from the western coast of Asia Minor and copper from Cyprus were imported in large quantities. Documents dating from the years 551–550 prove the delivery of several hundreds of kilos of iron and copper from Yaman ('Ionia', here the Greek sea-coast of Asia Minor, in other contexts Greece in general) for the temple of Eanna in Uruk. These texts tell of the import from Syria and Lebanon of various dyes, blue-purple wool, spices, honey, twenty jars of white wine, and some 130 kg of Egyptian alum. Iron was also brought from Cilicia; a document of the time of Nabonidus tells us of the acquisition there of over 900 kg of this metal. Another text from the year 601 B.C. records the delivery to weavers of over 2 kg of 'Ionian' blue-purple wool for producing garments for statues of the goddesses of the temple of Eanna.⁵² In maritime trade in the time of Nebuchadrezzar the leading role was taken by Ur, which was well placed on the route from the Indian Ocean to the Mediterranean.

Prices for basic commodities were as follows: one *kur* (approximately 180 litres) of barley or dates cost one shekel (8.42 gr) of silver, one *kur* of sesame seed ten shekels, four litres of honey one shekel, one talent (30 kg) of salt one shekel, one mina (505 gr) of wool half a shekel (but one mina of imported blue-purple wool cost about 15 shekels). Outer garments could be bought for 2 shekels. An ox cost about 20 shekels, a cow a few shekels less, a sheep 2 shekels. A jug of barley or date beer cost less than one shekel. A boat cost one mina or more, a house from 1 to 5 minas. Burnt bricks cost from 50 to 100 per shekel. For the same amount of silver one could buy 25 kg of asphalt, used as building cement. Donkeys, which served as a basic means of transport for supplying heavy material, had a high price – up to 30 shekels. A field of one hectare cost 2 to 3 minas or more, a date-palm grove or a garden of the same size was one and a half or two times as expensive.

Metal, although it was exclusively imported, was comparatively low priced. Thus 303 kg of copper from 'Ionia' was sold in Uruk for 3 minas 20 shekels of silver, 18.5 kg of tin for 55.5 shekels, about 65.5 kg of iron from Lebanon for 42.6 shekels. One paid 1 mina 17.3 shekels for 217.5 kg of Egyptian alum, and 36.6 shekels of silver for 28 kg of lapis lazuli.⁵³

In internal trade, payments were made by means of silver ingots in various forms, squared, circular, or star-shaped. Minted coin was not used at all in the country. There was a detailed technical terminology for

⁵² A 697.⁵³ A 1011.

determining the purity of the silver in common use to safeguard traders and buyers from fraud. Silver ingots contained various proportions of alloy (most frequently an eighth part, more rarely a fifth, tenth, or twelfth), and carried a stamp designating the standard. Apparently private persons as well as temples had the right to produce silver ingots, giving them a definite shape, weight, and purity similar to those which were already current. Frequent selling and buying wore the ingots slightly away, but this was unimportant as they were weighed in each transaction. Texts often mention 'refined silver' freed of alloy by melting down. So-called 'white silver', having a high percentage of alloy, had less value.

The palace and the temples had devised a standard technique for the monetary realization of large sums of taxes, voluntary gifts, and other income. As the taxes were paid in silver of lower value, to achieve uniformity this silver was sent to palace and temple workshops for purifying and remoulding into ingots of standard weight and quality, after which the ingots were stored in the treasuries.⁵⁴

Gold was regarded as merchandise and was not used as money. The relation of gold to silver was approximately 1 to 13.6. For instance in 696 B.C. the temple Eanna bought various quantities of gold from different individuals, among them 6 minas from one *tamkāru* on the basis of 1 talent 1 mina 3 shekels (30 kg 530 gr) of silver for 4 minas 25 shekels (2 kg 230 gr) of gold.⁵⁵

⁵⁴ A 1019.

⁵⁵ A 1011, 23.

BABYLONIAN MATHEMATICS, ASTROLOGY,
AND ASTRONOMY

ASGER AABOE

In no domain has the influence of ancient Mesopotamia on Western civilization been more profound and decisive than in theoretical astronomy and, principally through it, mathematics. Indeed, in the course of the last few decades it has become increasingly clear that all Western efforts in the exact sciences are descendants in direct line from the work of the Late Babylonian astronomers.

The anonymous creators of Babylonian theoretical astronomy – probably of the fourth or fifth century B.C. – drew their essential ingredients from several branches of learning and literature, chief among them mathematics and, for observations, the astronomical diaries, closely linked to the celestial omen texts.

I. BABYLONIAN MATHEMATICS

Babylonian mathematical texts are plentiful and well edited.¹ In respect of time they fall in two distinct groups: one Old Babylonian from the centuries about 1600 B.C., the other mainly Seleucid from the last three or four centuries B.C. In respect of content there is scarcely any difference between the two groups of texts. Thus Babylonian mathematics remained constant, in character and content, for nearly two millennia. Its nascent phase escapes us entirely.

The backbone of Babylonian mathematics is the sexagesimal number system. It is a place-value system, like our decimal system, but of base 60 rather than 10. It was used to write both whole numbers and certain fractions (the equivalents of our decimal fractions) and was without doubt the most efficient way of writing numbers in antiquity. It alone reduced the standard four operations of arithmetic to matters of mere routine, particularly with the aid of the multiplication and reciprocal tables that we find in great numbers. (The sexagesimal system was adopted by the Hellenistic astronomers Hipparchus (c. 150 B.C.) and Ptolemy (c. A.D. 150) for writing the fractional parts of numbers, and so we still subdivide our hours and degrees in the Babylonian manner.)

¹ See A 1031; A 1036; A 1037; A 1048.

The mathematical texts fall largely into two classes: table texts, in which are tabulated functions of various complexity, and problem texts, in which problems are posed and solved. A large problem text contains many examples, often ringing changes in pedagogical order on a central theme.

From the multitude of texts Babylonian mathematics emerges as a creation with well-defined features. Since the sexagesimal number system made numerate Mesopotamians sovereign computers, it is hardly surprising that Babylonian mathematics shows a strong preference for what we today would call algebra and number theory. Though we encounter a considerable amount of geometrical knowledge, geometry often serves merely as a guise for essentially algebraic problems, as when in the statement of a quadratic equation you are asked to add an area and a length in violation of geometrical sense. Further, the geometrical problems all aim at computing some numerical quantity, be it length, area, or volume.

More specifically, we find solutions of first and second degree equations (the latter according to the still current 'formula') and some of these require the reduction of expressions of great complexity. In the geometrical vein the Babylonians computed correctly areas and volumes of simple polygons and solids and, most surprisingly, they freely used the so-called Pythagorean theorem over a millennium before Pythagoras' birth. We even have a text (Plimpton 322)² which implies fifteen solutions in whole numbers of some magnitude of the Pythagorean equation

$$x^2 + y^2 = z^2$$

However, nowhere do we find a theorem stated in general terms, nor anything like a proof, though sometimes a solution is so detailed that the underlying general procedure becomes quite obvious.

II. BABYLONIAN ASTRONOMY

The mathematical texts of known provenance come from a number of sites scattered over ancient Mesopotamia. In contrast, the bulk of the astronomical texts derives from only three locations.

From Ashurbanipal's library in Nineveh (Kouyunjik) we have most of the texts centred on the series of celestial omens, *Enūma Anu Enlil*.

Secondly, we have a group of some 1,600 astronomical texts obtained from dealers during the last decades of the last century; they were the product of unscientific excavations of what must have been an extensive astronomical archive somewhere in the city of Babylon. About 1,200 of

² A 1037, 38.

these are non-mathematical astronomical texts, classified by A. Sachs as Diaries, Almanacs and Goal-Year texts.³ The rest are concerned with mathematical astronomy, and we shall refer to them as being of the *ACT* type after the standard abbreviation of O. Neugebauer's *Astronomical Cuneiform Texts*,⁴ where most of them were published.

Thirdly, there is a smaller group of texts, mostly of the *ACT* type, that come from Uruk, most likely from the domain of the Reš sanctuary.

In respect of content we have, then, three principal classes of astronomical texts. First there are those which in one way or another are concerned with astronomical omens. At the core of this class is the series of about 70 tablets now, as in antiquity, known by its opening phrase '*Enūma Anu Enlil*' (When [the gods] Anu and Ellil). The contents of this collection of omens are presumably very old, but only a few Old Babylonian fragments of some of the tablets are known. The two-tablet series *Mul Apin* is more astronomical in character and very likely younger than *Enūma Anu Enlil*. Finally there are the Royal Reports written by specialists in astronomical omens from various cities of the kingdom to the Assyrian king.⁵ Such a report may contain an observation and an interpretation of its significance according to the canonical texts, mostly *Enūma Anu Enlil*. These reports date from about 700 B.C.

The second class, that of the Astronomical Diaries and related texts, contains or is based on a high proportion of observations. They come from the astronomical archive in Babylon and span in time the interval from about 750 B.C. to A.D. 75, the text from this last year being the latest datable text written in cuneiform.⁶

Thirdly, the mathematical astronomical texts, those of the *ACT* type, come from the astronomical archive in Babylon and from Uruk. They are, in respect of date, from the last three or four centuries B.C. (the Uruk texts stop before c. 150 B.C.), so they represent one of the last, as well as one of the finest contributions of Mesopotamian culture.

The three groups of texts are intimately connected. Indeed, all three categories were kept in the archive in Babylon; the scribes who wrote even the elaborate theoretically computed ephemerides⁷ of *ACT* called themselves by the title *ṭupšār Enūma Anu Enlil* (scribe of [the series] *Enūma Anu Enlil*). The Diaries can be viewed as collections of raw material for omens, and they provided in the process the observational basis for constructing the theories behind the *ACT* texts; and, finally, the *ACT* texts predict precisely the core of the celestial phenomena recorded in the Diaries.

Lastly, a few remarks about the astronomical archive in Babylon.

³ A 1044.

⁴ A 1039.

⁵ A 1032.

⁶ A 1047.

⁷ An ephemeris lists dates and corresponding astronomical information, not necessarily day by day.

Colophons, names of scribes, scribal families, runs of the British Museum's accession numbers, and many other features assure its existence, but we do not know its precise location within the vast ruins of Babylon, for all the texts from it were excavated without records being kept. The earliest Diary is dated by A. Sachs to -651 (= 652 B.C.),⁸ and recently he published six texts from A.D. 31 to 75.⁹ These late texts throw a particularly interesting light on the activities around the archive. By 275 B.C. the government had moved from Babylon to Seleucia and Antiochus ended Babylon's civil existence. The once great and glamorous metropolis fell rapidly into decay, and some three centuries later Strabo, who died c. A.D. 20, writes that the greater part of Babylon is deserted and quotes the comic poet who said 'The Great City is a great desert'. Yet these six texts show that even after Strabo's time there were still people living in the ruins of Babylon who not only knew, and taught others, the difficult art of reading and writing technical Akkadian in cuneiform, but who also had access to the astronomical archive and the desire and competence to use and increase it. Here one may well recall that Pliny (d. A.D. 79) in *Natural History* VI.30.121/2 remarks about Babylon, 'The temple of Jupiter Belus still remains - it was here the creator of the science of astronomy was - the rest has reverted to desert.' Indeed, many of the astronomical texts from Babylon carry the invocation *ina amat Bel u Beltia lišlim* (at the command of [the deities] Bel and Beltia, may it go well).

III. CELESTIAL OMEN TEXTS, ASTROLOGY

Of the seventy tablets of the series *Enūma Anu Enlil* of celestial omens, the first twenty-three concern the Moon and the next twenty the Sun. Then follow a few tablets of meteorological omens, and the last twenty deal with planets and fixed stars.

Most of the astronomical protases are vague and qualitative in the extreme ('If Jupiter remains in the sky in the morning . . .'). Thus we find much concern about the physical appearance of the Moon, for example, on the important evening of its first appearance or during eclipses, whether it is light or dark, which way its horns point, or whether it is surrounded by a halo.

Tablet 63, the famous, if not notorious, Venus Tablet of Ammišaduqa, offers a sharp contrast to this vagueness. The protases of its total of fifty-nine omens give month and dates of first and last visibility of Venus as a morning or evening star, and the length in days of its periods of invisibility, for twenty-one consecutive years. The link to Ammiš-

⁸ There is a difference between the astronomical and historical reckoning of early dates thus: year 0 = 1 B.C., year -1 = 2 B.C., etc.

⁹ A 1047.

aduqa is provided by the tenth omen: instead of the expected apodosis it gives what Kugler brilliantly read as 'The Year of the Golden Throne', the name of the eighth of his twenty-one regnal years. It is very natural to assume that the protases constitute an observational record of the appearances and disappearances of Venus for the reign of Ammišaduqa, and this assumption has underlain the role this text has played in modern attempts at establishing an absolute Old Babylonian chronology.

The text's information about Venus, Sun, and Moon (this last because the calendar is strictly lunar) was used by Langdon, Fotheringham and Schoch in their edition of the text,¹⁰ and they were able to restrict, on astronomical grounds, the beginning of Ammišaduqa's reign to a limited number of possibilities in the early second millennium. Most historians chose to use one of the middle chronologies, but for no strongly compelling reason.

In a lunar calendar, where a new month begins with the first appearance of the new crescent Moon, a month is either hollow (it has twenty-nine days) or full (thirty days), at least for Mediterranean latitudes. On the average there are slightly more full than hollow months, but the sequence of full and hollow months is highly irregular, and so contains much information. Langdon, Fotheringham and Schoch had tried to check their various chronologies against what they knew of full and hollow months, but their data were bad, and their results inconclusive.

In 1982 Peter Huber published the results of a long and deep investigation of these matters.¹¹ He had at his disposal the new edition of the Venus Tablet by Reiner and Pingree,¹² a fuller record of Old Babylonian full and hollow months provided by several Assyriologists, as well as some eclipse records and a few data from the Ur III period. He subjected this material to a highly sophisticated statistical analysis (made possible, not only by his great expertise, but also by the availability of modern computers) and reached the firm conclusion that the 'Long Chronology' made eminent sense, while the others made no sense at all. Thus we have Ammišaduqa 1 = -1701 (1702 B.C.), so Hammurabi began his reign in 1848 B.C. There seems, then, to remain but two reasonable choices: one must either reject the Venus Tablet as chronological evidence, or accept the 'Long Chronology'.

The imperfectly understood seventy tablets of *Enūma Anu Enlil* are at the centre of what at present seems a morass of related texts: extracts, commentaries, and reports. Once all of this material is brought under control we shall very likely have a firm grasp of the state of astrology in Mesopotamia, and the role of 'diviners', near the end of the Assyrian

¹⁰ A 1035.¹¹ A 1033.¹² A 1042.

empire, and we may also be afforded some notion of the tradition of some of the texts. The first step must, however, be to edit the relevant texts. An edition of the planetary omens by Reiner and Pingree is in progress,¹³ but otherwise we have only excerpts and surveys at our disposal.

The same situation obtains for *Mul Apin*, a series of two tablets. Though it contains some omens, it is principally a compendium of astronomical lore. One could call the presentation theoretical, but the treatment of various astronomical phenomena, like length of daylight, is always schematic in the extreme. The dates of the various parts of the series *Mul Apin*, its intended use, and the tradition of the texts cannot be determined at present.

The type of astrology we find in *Enūma Anu Enlil* is called judicial: the apodoses are concerned with events and conditions that affect king or country, such as war and peace, quality of harvest, and weather ('springs will open, Adad will bring his rain, Ea his floods; king will send messages of reconciliation to king').¹⁴

In contrast to judicial astrology we have personal astrology with its horoscopes for important events in the life of an individual, particularly birth. There is nothing astrological in the horoscope itself: it is simply a statement of the positions of Sun, Moon, and planets, perhaps also the rising point of the ecliptic (*horoscopus*), and other astronomical matters of interest, not observed, but somehow calculated for the horizon of a given locality at a certain moment. All this is purely astronomical, in the modern sense of the word. Astrology enters only in the interpretation of the horoscope's information.

Virtually all the evidence for horoscopy is from Hellenistic and Roman times when personal astrology gained great popularity. Though there are many, but usually very vague, references to Chaldeans and Babylonians in the Greek and Latin astrological literature, the cuneiform evidence for personal astrology was scant and published in scattered places with varying competence. Until 1952 it was, in fact, possible to build a persuasive case for a Hellenistic origin of personal astrology. However, in that year A. Sachs gathered all the published cuneiform horoscopes, added several unpublished ones as well as related texts, and subjected them to a uniform and highly competent treatment.¹⁵ He managed to date, on astronomical grounds, the horoscopes whose dates were broken off, and the earliest was from 410 B.C. In addition he had four horoscopes from the third century B.C., so there is no doubt about the Babylonian priority in horoscopic astrology. At the moment it seems likely, but not certain, that Hellenistic and Roman personal astrology was derived from its Babylonian predecessor.

¹³ A 1042; A 1043. See also A 1040.

¹⁴ A 1042, 29.

¹⁵ A 1044a.

IV. ASTRONOMICAL DIARIES AND RELATED TEXTS

When A. Sachs published his classification of non-mathematical astronomical texts¹⁶ he had at his disposal a dozen of them. Half a decade later his survey of part of the holdings of the British Museum increased his material a hundred-fold, and he spent the rest of his life working on these texts. Miraculously his original classification of them as Diaries, Almanacs, Goal-Year texts, and Excerpts survived this violent expansion.

In time, the texts cover, though not uniformly, the interval from c. 750 B.C. to A.D. 75, and nearly all of them come from the astronomical archive in Babylon, as we have already said. At the centre of this group of texts are the Astronomical Diaries; all the others are derived from them in one way or another.¹⁷

The unit in a Diary is one month, beginning with a statement about the new crescent, whether it was high or low, and the time from sunset to moonset in time degrees (one day is 360 time degrees, so one time degree is four of our minutes). We are told if this interval was measured or estimated, and whether the previous month turned out to be hollow or full (the first sighting of the new Moon marks the beginning of a new month). The Diary then follows the progress of the Moon throughout the month, noting when it passes one of the thirty-one Normal Stars as well as the visible planets, whether above or below, and often by how much. Finally we learn when the Moon last could be seen, and how long it then was, again in time degrees, from moonrise to sunrise, and so ends the main part of the Diary unit, unless there happens to be a solar eclipse at the subsequent conjunction of Sun and Moon. At mid-month we find four time intervals between the four combinations of horizon crossings of Sun and Moon near full Moon (the full Moon rises near sunset and sets near sunrise), as well as remarks about a lunar eclipse whenever one occurs.

Interspersed in this account of the Moon's monthly behaviour, and in proper chronological order, is information about the planets, about unfavourable weather conditions and uncommon meteorological phenomena such as rainbows and haloes.

After this day-by-day account of astronomical and meteorological events we find several terse statements that concern the month as a whole, first about the state of the commodities market in the form of how much one shekel of silver would buy of certain staples, *viz.* barley, dates, pepper(?), cress(?), sesame, and wool (always in this order). It is noted if the prices changed in the course of the month (in one extreme case we are given quotations for morning, midday, and afternoon of a single day).

¹⁶ A 1044.

¹⁷ A 1029, in which the only English translation (by A. Sachs) to date of a Diary is published.

Next we find mentioned the zodiacal signs in which the planets resided during the month, followed by a report on the monthly change in the level of the Euphrates. Concluding the monthly unit of a Diary we often find a terse historical statement. It may concern an event of little interest to a modern scholar – an outbreak of fire in some quarter of Babylon or a theft from the temple. However, then again we can read about the enthusiasm with which the cities of Babylonia greeted Alexander's troops as liberators after Arba'il, and later about Alexander's death in Babylon.¹⁸

The importance of the Diaries, once they are published,¹⁹ lies not only in the kind of information they contain – astronomical, meteorological, economic, and historical – and in the long time interval they span, but also in the fact that because of the ever-presence of the swiftly moving Moon we can date them to the very day, if we can date them at all.

Among the related texts the Goal-Year texts ought to be mentioned. Such a text predicts the behaviour of Moon and planets for a given year – the goal year – by presenting information extracted from Diaries that antedate the goal year by astronomically significant periods (71 or 83 years for Jupiter, 8 years for Venus, 46 years for Mercury, and so on). This happens to be a quite efficient way of predicting phenomena of the sort considered, and it is based on a recognition of the periodic character of planetary and lunar behaviour, a notion that is fundamental in Babylonian theoretical astronomy.

Finally a remark about the kind and quality of planetary observations in the Diaries: two sorts of phenomena are recorded, planetary phases (for an outer planet they are first and last visibility, stationary points, and opposition) with a note of the zodiacal sign in which the planet is when phase occurs, and a planet's passage past a Normal Star, whether above or below and by how much. The observations are probably made with the naked eye unaided by any sort of instrument; indeed, as far as we can see, the only instrument used to gather the information given in the Diaries was a water-clock for determining the fairly short time intervals between horizon crossings of Sun and Moon.

Babylonian arithmetical astronomy

We have 400 to 500 texts, many of them small fragments, that in one way or another deal with arithmetical astronomy. Some 300 of them were published in *ACT* in 1955, the rest subsequently in various journals. They can be roughly divided into four classes: lunar or planetary

¹⁸ A 1046.

¹⁹ A. Sachs worked on the Diaries for the last thirty years of his life. After his death in 1983, and according to his wish, the task of bringing them to publication has been taken over by H. Hunger.

ephemerides or procedure texts. The procedure texts, or precepts, tell us how to calculate ephemerides (texts that present dates and corresponding astronomical information, the ultimate aim of the theory), and ideally a set of procedure texts and a knowledge of the rules for finding initial values (these rules still escape us) should enable us to compute any ephemeris. In fact, the path to our present control of Babylonian mathematical astronomy has meandered between ephemerides and procedure texts, for it was often easier to uncover the rules underlying the ephemerides' computation than to penetrate the precepts' terse, technical terminology.

We have as yet no texts setting forth the very consistent theories that underlie the instructions of the procedure texts – and it seems unlikely that we shall find any – so these theories have had to be reconstructed by modern scholars. There emerges a theory – or rather two families of theories, Systems A and B, as they are now commonly called – with well-defined, regular features. It is alas, not possible to do justice to the beauty and elegance of these constructs in a brief, descriptive account, for their qualities reside precisely in the subtle, cunningly designed interplay of mathematically simple technical details.

We cannot decide whether there was an oral tradition of handing down the inner structures of the theories, and justifications of them, from generation to generation, but it is not completely excluded. Indeed, we find displayed in the procedure texts many basic parameters that normally lie buried well within the theories and are of no direct use to someone calculating an ephemeris.

As to the dates of the texts, there are two that are of concern when we are dealing with an ephemeris: the date it was written, and the intended date or time span of its contents. The latter is always given in an ephemeris, but usually near the left edge and thus particularly vulnerable; but even if the dates are broken off we can very often restore them securely on astronomical and structural grounds. As to the former, we can only be sure of the date of composition or writing if the scribe himself gives it in a colophon, and even completely preserved texts most often carry none. We have less than twenty texts for which we are sure of both dates, and in all instances it turns out that the date of writing is near the beginning of the time interval covered by the contents. The year numbers are given in the continuing count of the Seleucid Era (began 311 B.C.) in all but a very few texts. The exceptions with preserved dates employ regnal years in the usual fashion. The earliest of these is a text dealing with solar eclipse possibilities (we have it in duplicate).²⁰ The dates run from VIII/II Xerxes to IV/8 Artaxerxes I (5 December 475 to 21 July 457 B.C.). It is tempting to view this text as evidence for an early date

²⁰ Texts B, C, and D in A 1030.

for the invention of lunar System A, to which its methods belong. However, all we can be sure of is that it was written after the events it describes: first, the calculated eclipse possibilities are paired with observational remarks from Diaries and, secondly, it dates correctly in two reigns. (Incidentally, we do not know of a single text that employs a regnal year in excess of the king's natural reign until, of course, we reach the Seleucid era.) Thus the text clearly represents a calculation backwards in time for the purpose of testing theory against past observations. At the moment it seems likely that Babylonian theoretical astronomy was created sometime in the fourth century B.C.

Two features of Babylonian theoretical astronomy seem particularly peculiar to a modern eye: first, the total absence of any underlying geometrical models or 'orbits' and, secondly, its choice of independent variable. Indeed, the planetary and lunar models, as we still call them, are entirely arithmetical in character; the mathematical skills required for the computation of an ephemeris are limited to the four basic operations of arithmetic: addition, subtraction, multiplication, and division. The approach resembles curiously that of modern electronic computers, and the procedure texts often want only direct translation into computer language to become effective programs.

The other point is that since the time of Ptolemy the astronomer (*c.* A.D. 150) we have been accustomed to consider time the independent variable in astronomical theories; in other words, the principal question we have wanted our theories to answer has been: given any moment of time, past, present, or future, where among the fixed stars was, is, or will be, a certain planet, Sun, or Moon? It is far otherwise in Babylonian astronomy. To take an outer planet (Mars, Jupiter, or Saturn) as an example, all interest is focused, at least at first, on one of its five phases (first or last visibility, first or last stationary point, or opposition), and a typical question the Babylonian theory is prepared to answer is: if Jupiter is at a first stationary point on a certain date and at a certain celestial longitude, when and where will it next be at a first stationary point? The other phases are treated analogously, and the question of finding daily positions, that is, that of constructing an ephemeris in the literal sense of the word, is solved by interpolation between dates and positions of adjacent phases, if it is addressed at all.

To be more specific, we have excerpted in Table 2, columns I–IV, the first 25 of in all 56 lines of the text *ACT* No. 600, an ephemeris for Jupiter at first stationary point, Φ , for the years S.E. 113 to 173 (–198 to –138).²¹ According to its colophon the text was written in Uruk S.E. 118, 12/VII (5 October 194 B.C.), so it is mostly a forecast.

²¹ S.E. = Seleucid Era. See p. 279 n. 8 and p. 284 above.

Table 2

I.	I y. SE	II $\Delta\tau$	III mo. & date	IV λ	V λ	VI Jul. date	VII λ	VIII date
1	113**	48; 5,10	I 28;41,40 $\pm$	κ 8;6 Φ		-198 Apr 22	κ 3	II 4
	114	48; 5,10	II 16;46,50 $\pm$	$\approx$ 14;6 Φ	36	-197 May 29	$\approx$ 8	II 21
	115*	48; 5,10	IV 4;52	κ 20;6 Φ	36	-196 Jul 3	κ 14	IV 12
	116	48; 5,10	IV 22;57,10	τ 26;6	36	-195 Aug 9	τ 21	IV 29
5	117	48; 5,10	VI 11; 2,20	π 2;6	36	-194 Sep 15	π 26	VI 15
	118*	45;54,10	VII 26;56,30	ω 5;55	33;49	-193 Oct 19	π 29	VII 28
	119	42; 5,10	VIII 9; 1,40	Ω 5;55	30	-192 Nov 18	Ω 0	VIII 12
	120	42; 5,10	IX 21; 6,50	$\mp$ 5;55	30	-191 Dec 20	$\mp$ 1	IX 24
	121*	42; 5,10	XI 3;12	ϵ 5;55	30	-189 Jan 18	ϵ 1	XI 7
10	122	42; 5,10	XI 15;17,10	η 5;55	30	-188 Feb 18	η 2	XI 18
	123*	43;16,10	XII 28;33,20	ζ 7;6	31;11	-187 Mar 21	ζ 4	XII ₂ 4
	125	48; 5,10	I 16;38,30	κ 13;6	36	-186 Apr 28	κ 8	I 22
	126*	48; 5,10	III 4;43,40	$\approx$ 19;6	36	-185 Jun 3	$\approx$ 13	III 10
	127	48; 5,10	III 22;48,50	κ 25;6	36	-184 Jul 9	κ 19	III 30
15	128	48; 5,10	V 10;54	ν 1;6	36	-183 Aug 15	τ 26	V 17
	129*	48; 5,10	VI 28;59,10	π 7;6	36	-182 Sep 21	π 0	VI 3
	130	45; 4,10	VII 14; 3,20	$\approx$ 10;5	32;59	-181 Oct 24	$\approx$ 3	VII 15
	131	42; 5,10	VIII 26; 8,30	Ω 10;5	30	-180 Nov 23	Ω 5	VIII 28
	132**	42; 5,10	IX 8;13,40	$\mp$ 10;5	30	-179 Dec 23	$\mp$ 5	IX 11
20	133	42; 5,10	X 20;18,50	ϵ 10;5	30	-177 Jan 23	ϵ 5	X 22
	134*	42; 5,10	XII 2;24	η 10;5	30	-176 Feb 22	η 6	XII 6
	135	44; 6,10	XII 16;30,10	ζ 12;6	32;1	-175 Mar 26	ζ 9	XII 21
	137*	48; 5,10	II 4;35,20	κ 18;6	36	-174 May 3	κ 13	II 10
	138	48; 5,10	II 22;40,30	$\approx$ 24;6	36	-173 Jun 8	$\approx$ 18	II 28
25	139	48; 5,10	IV 10;45,40	κ 30;6	36	-172 Jul 14	κ 25	IV 18

In columns I and III we find year, month, and date. The year number (S.E.) is written, for example, 1-me 13 (1 hundred 13), but all other numbers are sexagesimals.²² The dates are in *tithis* ($\frac{1}{30}$ synodic month) and fractions thereof – the fractions are solely of computational interest (the *tithi* is so called because it was first encountered, in modern times, in Hindu astronomy; Babylonian terminology draws no distinction between *tithi* and day). The use of the *tithi* frees us from concern about which months in the future will be full or hollow; the date in *tithis* is, of course, always close to the date in days. The years with a single asterisk (the text has ‘a’) contain a month XII₂, those with a double asterisk (‘kin a’) a month VI₂. The fixed 19-year pattern of intercalations of the late period can readily be established from this short excerpt.

Column II contains the difference in *tithis* ($\Delta\tau$) of the dates less 12 months. The convention of the text is that the difference between the date in line n and that in line $n-1$ is 12 months plus the $\Delta\tau$ listed in line n .

Column IV gives the longitude, λ , of Jupiter at its first stationary

²² The sexagesimal numbers are transcribed so that, e.g., 48;5,10 = 48 + $\frac{5}{60}$ + $\frac{10}{3600}$. There is no equivalent of the semicolon in cuneiform writing.

point in terms of degrees of a zodiacal sign. In column V, which is not in the text, we have presented the differences, $\Delta\lambda$, of these longitudes. We note that columns II and V run parallel so that in each line

$$\Delta\tau - \Delta\lambda = 12;5,10$$

Thus we need bring but one of these columns under control to uncover the structure of the text and there are, as we shall see, good reasons to begin with $\Delta\lambda$.

Column V, the total progress of Jupiter from one first stationary point to the next, falls conspicuously into constant stretches of either 36° or 30° separated by intermediate values. The key to the structure of this column is the realization that the scheme is tied to the ecliptic. As a procedure text would have it (e.g. *ACT* No. 821):

From Gemini 25° to Scorpio 30° add 30° . Whatever exceeds Scorpio 30° , multiply it by $1;12$ and add it to Scorpio 30° .

From Scorpio 30° to Gemini 25° add 36° . Whatever exceeds Gemini 25° , multiply it by $0;50$ and add it to Gemini 25° .

Thus the ecliptic is divided into two parts – the fast and the slow arc – inside which the phenomenon progresses in steps of 36° and 30° respectively. If such a step crosses a boundary of the arcs, the amount that reaches into the new zone is modified by one of the factors $0;50$ and $1;12$. It is significant that these two factors – $5/6$ and $6/5$ in fractional form – are precisely the ratios $30:36$ and $36:30$.

With these simple rules we may now continue the text as long as we please: first we compute the column of longitudes and form their differences $\Delta\lambda$. From these we obtain $\Delta\tau$ from

$$\Delta\tau = \Delta\lambda + 12;5,10$$

and so the date columns.

In column VI we have translated the dates in columns I and III into Julian dates; in column VII we have given the longitude of Jupiter corresponding to these dates according to modern tables; and in column VIII are the Babylonian dates of Jupiter's first stationary point, again from modern tables.

From these last columns can be judged the text's quality, which is surprising for a scheme of such simplicity, particularly when we allow for the systematic difference between modern and Babylonian conventions in counting longitudes (c. 5° at this time).

One of the reasons for this excellence and for the quality not deteriorating even in the course of a long text is that built into these seemingly simple schemes are certain period relations. In the present instance, if we continue the longitude column of our text for $\Pi = 391$

Table 3

No. 620	I	II	III	IV	V
i.	year	$\Delta\tau$	month & date	$\Delta\lambda$	λ
0	2,7	49;42	V 27;36	37;37	κ 24;31
1	2,8	47;54	VII 15;30	35;49	γ 30;20
2	2,9*	46;6	IX 1;36	34;1	□ 4;21
3	2,10	44;18	IX 15;54	32;13	∞ 6;34
4	2,11	42;30	X 28;24	30;25	♌ 6;59
5	2,12**	40;42	XI 9;6	28;37	♍ 5;36
6	2,13	41;47,30	XII 20;53,30	29;42	♎ 5;18
7	2,15	43;35,30	I 4;29	31;30	♏ 6;48
8	2,16	45;23,30	II 19;52,30	33;18	♐ 10;6
9	2,17*	47;11,30	IV 7;4	35;6	♑ 15;12
10	2,18	48;59,30	IV 26; 3,30	36;54	∞ 22;6
11	2,19	49;27	VI 15;30,30	37;22	κ 29;28
12	2,20*	47;39	VIII 3; 9,30	35;34	♊ 5;2
13	2,21	45;51	VIII 19; 0,30	33;46	♋ 8;48
14	2,22*	44;3	X 3; 3,30	31;58	∞ 10;46
15	2,23	42;15	X 15;18,30	30;10	♌ 10;56
16	2,24	40;27	XI 25;45,30	28;22	♍ 9;18
17	2,25*	42; 2,30	XII ₂ 7;48	29;57	♎ 9;15
18	2,27	43;50,30	I 21;38,30	31;45	♏ 11
19	2,28*	45;38,30	III 7;17	33;33	♐ 14;33
20	2,29	47;26,30	III 24;43,30	35;21	♑ 19;54
21	2,30	49;14,30	V 13;58	37;9	∞ 27;3
22	2,31**	49;12	VI ₂ 3;10	37;7	γ 4;10
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.

lines we shall reach precisely the longitude we began with and the longitudes will have skipped $Z=36$ times around the ecliptic in the process. Jupiter does in fact travel 36 times around in the course of 391 synodic phenomena and it takes $391 + 36 = 427$ years.

The constant stretches of $\Delta\lambda$ marks our text as belonging to System A, for $\Delta\lambda$ is treated as a step function of longitude. An example of planetary System B follows.

Table 3 gives the first 22 of at least 62 lines of *ACT* No. 620, an ephemeris for Jupiter at opposition for at least the years S.E. 127 to 194. It is arranged much like the previous text except that here both difference columns are included, and we shall first examine column IV, $\Delta\lambda$.

The entries in column IV decrease regularly by the amount $d=1;48^\circ$ per line until a minimum is passed between lines 5 and 6. From line 6 the values increase, again by $1;48^\circ$, until a maximum is passed between lines 10 and 11, whence they begin to decrease, and so on. If we plot $\Delta\lambda$ as a function of line number we get a piece-wise linear graph like the one in Fig. 12. One gets from an ascending to a descending branch of such a zigzag function, as we call it, by following a simple reflexion rule (often

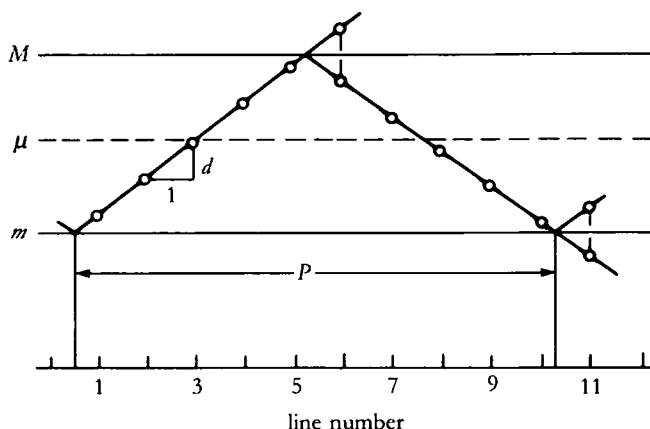


Fig. 12.

stated in procedure texts); if the application of the line by line difference d (here $1;48^\circ$) leads to a value larger than a certain fixed maximum M (here $38;2^\circ$), then the excess over M is subtracted from M to yield the next value of the function, and symmetrically about the minimum m (here $28;15,30^\circ$).

The zigzag function, sometimes refined in various ingenious ways, is one of the two basic modes of describing a simply periodic component of a more complex astronomical phenomenon – the other is the step function of System A. It is easy to compute, and it has a simply controlled period

$$P = \frac{2(M - m)}{d}$$

With the parameters of the present text, $M = 38;2^\circ$ and $m = 28;15,30^\circ$, $d = 1;48^\circ$, we obtain

$$P = 10;51,40 = \frac{391}{36}$$

We recognize these numbers as precisely those that underlay the System A scheme for Jupiter. There they implied that $\Pi = 391$ applications of the synodic arc lead to precisely $Z = 36$ revolutions in the ecliptic. Here the period relation is that Π lines will lead to precise return in $\Delta\lambda$ and will embrace Z 'waves' of the zigzag function.

Here we can only mention the complexity of the lunar theories of Systems A and B – a lunar ephemeris may have 14 to 15 columns, each fairly simple, but all intricately interrelated. The principal anomalies of Sun and Moon were recognized and used in their proper places. As in the

planetary texts, the main aim of lunar ephemerides is to predict the phenomena recorded in the Diaries: eclipses, the six interesting time intervals between horizon crossings of Sun and Moon, and the evening of first visibility. While the texts' lunar eclipse predictions were solid enough, their solar counterparts were, and could be, mere warnings, separating those conjunctions or new moons at which a solar eclipse might happen from those – nearly five times as many – at which solar eclipses were entirely out of the question. (Predictions of solar eclipses for given localities involve a knowledge of the shape of the Earth and the relative sizes and distance of Earth and Moon.)

In sum, we see in Babylonian theoretical astronomy the first successful attempt at addressing the problem that ever since has remained central in the exact sciences: to give a mathematical description of a well-defined class of natural phenomena, a description capable of yielding numerical predictions that can be tested against observations.

Transmission of Babylonian astronomy

The tradition of the reigns of the Late Babylonian and Achaemenid kings has been unbroken since Ptolemy composed his king list *c.* A.D. 150 as a useful appendix to his *Almagest* or his later *Handy Tables*. He gives the length of each reign in Egyptian years (of 365 days each) and keeps a running total from the beginning of the reign of Nabonassar (747 B.C.), 'for', as he says (*Almagest* III.7), 'that is the era beginning from which the ancient observations are, on the whole, preserved down to our own time'.²³ Ptolemy's chronology has, by and large, been confirmed by cuneiform evidence, and there is no doubt that he is referring to the Astronomical Diaries in the passage quoted above. There is, however, much more evidence for Ptolemy's knowledge of Babylonian astronomy: his use of the sexagesimal system for writing fractions, of degrees, and of several well-established Babylonian parameters like the value

$$1 \text{ month} = 29;31,50,8,20 \text{ days}$$

for the mean synodic month, taken directly from lunar System B. Further, Ptolemy's complaints about the ancient planetary observations (*Almagest* IX.2) clearly describe the kind of phenomena contained in the Diaries. It is not impossible that Ptolemy had direct access to cuneiform material – after all, the astronomical archive in Babylon was certainly still active 75 years before he wrote – but it is more likely that he used Hipparchus' compilation and convenient rearrangement of Babylonian observations (*Almagest* IX.2).

²³ A 1049, 166.

Hipparchus (c. 150 B.C.) seems the pivotal figure in the transmission of Babylonian astronomy to the West. All his works are lost save a commentary on Aratus' astrological poem, but Ptolemy is generous with references to his highly esteemed predecessor. It is clear that Hipparchus borrowed Babylonian parameters such as the length of the month cited above, and that he used Babylonian observations which would have been useless to him without control of Babylonian chronology.

Thus Ptolemy in all likelihood also acquired the substance of his king list from Hipparchus. Where Hipparchus in turn obtained his chronological knowledge is much less certain, but we can suggest two possibilities among the types of texts we have in hand: chronicles and extracts from the Diaries of a particular sort of information, e.g. about eclipses, some of which cover considerable time intervals. Finally, we must not forget that the Babylonian astronomers themselves needed a command of chronology to make proper use of their archive.

Several candidates have been mentioned in the literature as the transmitters of Babylonian astronomy, among them Aristotle. Though it is not excluded that some of these carried Babylonian lore to the West, there is no evidence at all that the sophisticated theoretical astronomy was accessible to them. Furthermore, Greek astronomy was not ready for the Babylonian lesson until after the work of Apollonius of Perge (c. 200 B.C.) on epicyclic models. Greek astronomy had hitherto been concerned with building geometrical devices that in a qualitative manner could simulate planetary behaviour.

We begin to see more clearly what Hipparchus achieved. Not only did he obtain observations, parameters, and number system from the Babylonians in addition, perhaps, to some methods,²⁴ but more fundamentally the idea that it is possible and desirable to have astronomical theories produce numerical predictions. He set out to adapt and modify epicyclic models to that purpose and succeeded for Sun and new and full Moon, but passed the planetary problem on to his successors. We know few of them, and most of these only by name, until we reach Ptolemy. As he sets forth in the *Almagest*, it was he who completed Hipparchus' task by devising a lunar model that works also in quadrature, and by constructing satisfactory planetary models.

The *Almagest* remained the model and foundation of treatises on theoretical astronomy to the time of Kepler, and theoretical astronomy in turn remained the exemplar of all other exact sciences until at least the eighteenth century, teaching that their aim should be to give a mathematical description of a sensibly defined class of natural phenomena, a description capable of producing numerical predictions that can be

²⁴ A 1034; A 1041; A 1049, 224 n. 14; for the entire subject of astronomy in antiquity see A 1038, which has very full references.

tested against observations. It is in this sense that we claim Babylonian mathematical astronomy as the common ancestor of modern efforts in the exact sciences.

In 1988, O. Neugebauer read and understood a Greek papyrus from Roman Egypt, now in private hands.²⁵ It turned out to give 32 lines of Column G of Babylonian lunar System B, the very column whose mean value led F. X. Kugler to recognize it as Ptolemy's for the mean synodic month.²⁶ This discovery completely changed our estimate of the level of understanding of Babylonian methods in Hellenism.²⁷

²⁵ A 1039A. ²⁶ A 1034A.

²⁷ To the basic bibliography for this section, A 1029–49, should now be added A. J. Sachs and H. Hunger, *Astronomical Diaries and Related Texts from Babylonia*: I, *Diaries from 652 B.C. to 262 B.C.*; II, *Diaries from 261 B.C. to 165 B.C.* (Vienna, 1988–9); and H. Hunger and D. Pingree, *MUL.APIN: an Astronomical Compendium in Cuneiform* (AfO Bh 24, 1989).

CHAPTER 28c

FIRST-MILLENNIUM BABYLONIAN
LITERATURE

ERICA REINER

I. DEFINITION AND TRADITION

We do not know what literature was composed in first-millennium Babylonia; we know only what literary works were kept in royal and private libraries of that period. Some works may merely have found a repository there; others were very much in use, on religious occasions, to be recited or to serve as guides for ritual and magic performances. Still others were copied again and again, and the scholarly literature was extensively commented upon.

At the outset it has to be stated that the word 'literature' is here used in a broad sense, to include not only *belles-lettres* but also the standardized works of various experts – in divination, magic, ritual, and linguistic scholarship. That is to say, we will be considering that body of texts that has been termed by Oppenheim the 'stream of tradition'.¹

The material to be considered is that kept at the royal library of Ashurbanipal at Nineveh, to which may be added such provincial libraries as Sultantepe, and, at the very end of the era of cuneiform writing altogether, the libraries of scholars in southern Babylonia, mostly from Uruk, dating to the Seleucid period, which to a large measure duplicate the texts from Nineveh and thus can serve to illustrate the literature of the period in question, 747–539 B.C.

The classification of these works here will follow traditional lines, even though the categories under which we classify them are those of the West, inherited from the classical world. The customary categories used in the classification of Babylonian literature, that is, epics, hymns, wisdom texts, and so on, probably would have had little meaning for the ancients, who characterized some poetry as 'songs' – sometimes with an additional specification – or 'incantations', or who simply called a longer, usually epic, poem a 'series' or 'set' named after its hero or its author, or even referred to it by its *incipit* only. Yet it is not entirely incorrect to label some texts 'epics', or 'hymns', or 'fables', even though these terms are only approximations. There are enough similarities

¹ A 43, 249.

between Babylonian works and comparable genres of classical literatures, which determine our categories, to warrant a gross classification of Babylonian works into these categories familiar to the modern Western reader. By retaining this traditional classification we establish some kind of common ground with the reader familiar with similarly named genres in classical or later Western literature. Moreover, in view of the fact that Mesopotamian literature is part of the entire tradition of Western literature and can and should be integrated into it through the Judaeo-Christian tradition on the one hand and the classical on the other, the genres defined for Western literature should be valid for Mesopotamian literature as well. This classification seems unavoidable at any rate, since the Babylonians themselves never developed – or at least did not write down – an *Ars Poetica*; nor do the occasionally indicated titles of literary works give us a clue to a native classification. These titles sometimes identify their function, sometimes their mode of recitation, and sometimes simply reflect a librarian's interest in their proper shelving.

Excluded from our presentation is, on the one hand, literature that is datable to and historically belongs to earlier periods, such as the royal inscriptions from the third and the second millennia, and certain polemic or propaganda literature that also precedes the period under consideration, and on the other hand a certain number of poems that have not found their way into the libraries. The reason why these poems were not accepted into the literary 'canon' – probably established around 1200 B.C.² – is not clear, since the surviving material is often very similar to comparable texts that were included.³ Certain literary texts from the Old Babylonian period, surviving only in a single copy, may have been school exercises in composition and never entered the mainstream of literature. Others, such as second-millennium versions of various epics, were recast in a 'canonical form' and the early versions discarded, as witness the various episodes of Gilgamesh that did not find their way into the twelve-tablet recension known to us from Ashurbanipal's library. Whether any of the literature was excluded on ideological grounds, or because it reflected a religious sensibility no longer current, cannot yet be established.

Although our purpose here is to give an overview of first-millennium literature, we cannot escape the problem of literary periodization that plagues interpreters of Babylonian literature.⁴ It is generally assumed that there is a single Standard Babylonian corpus, represented by late

² A 1169.

³ For example, the Old Babylonian humorous poem *At the Cleaner's* (A 1080) exists in a single copy only, while the *Tale of the Poor Man of Nippur* is known from copies from Sultantepe, Ashurbanipal's library (A 1088), and on a Neo-Babylonian school tablet from Nippur (A 1074).

⁴ A 1144.

copies, mainly those from royal or scribal libraries, but possibly, and in some cases almost certainly, going back to second-millennium originals. Excluded from this corpus are only those Old Babylonian or some later second-millennium texts that survive only in their original, early exemplar; these, for some reason, were not included in what is sometimes called the 'canon' but might perhaps better be called the 'scribal curriculum'.

While in this process of transmission there must have been historical developments from an earlier to a later and eventually a final version, it is only in the rarest of instances that these can be traced, unlike similar cases in Western literatures, where scholars of literary history or comparative literature often have sufficient data to study textual development or to follow transformations of a theme or poetic form within one culture, or across more than one.

A further consequence of this lack of historical perspective is our inability to date literary compositions on the grounds of style and language, and thereby to make any firm statement concerning the literary taste of a particular period.

All the libraries contain a mass of technical or scientific material, collected by the Mesopotamian scholars for their own use or copied in the course of their scribal training. These survive in several copies – usually up to six – in almost identical wording and even spelling; they may be regarded as the Babylonians' scholarly literature. This material includes not only the more narrowly scientific material, such as mathematics, astronomy, and technical manuals on glass making or wool dyeing, and such scholarly texts as sign lists and vocabularies (none of which will be considered here), but also texts used by the experts in divination or exorcism, that is, omen and magic literature, among which latter prayers, charms, and poems are sometimes also included.

Compared to the mass of such scholarly and technical literature, the number of compositions that are literary in a more narrow sense is very small (according to Oppenheim's estimate⁵ about one-third of an estimated 1,500 tablets), but their visibility is that much greater, as they have been studied and translated over and over since their decipherment in the nineteenth century. To this group belong epics, myths, religious poems (hymns and prayers), philosophical or didactic literature (known as 'wisdom literature'), and an occasional political or propaganda text, usually in verse or, rarely, in prose. To the last group should be assigned the inscriptions of Babylonian and Assyrian kings which are, on the one hand, written in an elevated and, in Neo-Babylonian times, stilted and archaizing language and, on the other, exist in several copies. Only the royal inscriptions can be dated to the period under consideration; the

⁵ A 43, 13–18.

library texts, whether literary or scholarly, may and often do go back to second-millennium originals.

Oppenheim's estimates were based on the size of Ashurbanipal's library in Nineveh, assuming that the royal library contained at least a representative selection of the 'stream of tradition' texts. Indeed, we know from a letter of Ashurbanipal addressed to Shadunu, the temple administrator of Borsippa, that he asked for texts to be collected all over the realm and sent to Nineveh. The texts requested ('writings that are proper for royalty' – *malṭaru ša ana šarrūti ṭābu*) are, however, rituals and magical texts whose performance was required for the proper conduct of affairs, and thus illustrate only the scholarly and not the belletristic literature known or available in this period. A list recently published,⁶ moreover, suggests that various scholars and experts were forced to donate tablets in their collections to the royal library. In this list, comprising a minimum of 1,441 clay tablets and 69 wax-covered polyptychs, or an estimated 2,000 tablets and 300 writing boards, only 10 tablets are inscribed with *belles-lettres*, the rest are professional works.

We will follow here the customary classification of literary texts into epics, hymns, fables, etc., although other, perhaps more promising ways of dividing the corpus could also be applied. One such division would separate literature centred around the king from literature centred around the gods and their cult. Another would be based on the difference between literary texts well established within the stream of tradition, as witnessed by many copies, and others that are extant in a single copy only and may have been composed for a specific occasion or a particular person. More difficult would be to separate the literature of the educated or upper classes, presumably centred around the court, from that of the common people, since the latter is not likely to have been committed to writing, and its existence can be inferred from scattered quotations only. Nor can the secular be sharply divorced from the religious, probably as much for the reason that it was matters concerning king, state, and cult that found their place in the stream of tradition as for the fact that the world view of Mesopotamia was closely interwoven with the ideas of religion.⁷

The relation of literary texts to their cultural context is still little known. Many of them were no doubt composed for the praise and entertainment of the king, and used on cultic occasions in which the king participated. Cultic performance was probably the *raison d'être* of various texts of religious content too, since prayers for the use of individuals other than the king are few and presumably secondarily adapted. Of the numerous narrative poems, several seem to imply that they were

⁶ A 508.

⁷ A 1170.

associated with apotropaic or prophylactic rituals, and thus to suggest that even such 'pure literature' was written down only when a practical occasion required it.⁸

These texts, which thus often represent a tradition of a thousand years or longer, remained in use even after Aramaic had replaced Akkadian as the spoken language and Aramaic writing on parchment had become the medium of everyday communication, for religious, scholarly, and display purposes; we need mention only the Akkadian versions of the trilingual Achaemenid inscriptions and certain rituals from the Seleucid period for which no earlier versions are known.

The libraries at Nineveh, Sultantepe, Babylon, and Uruk also contained a number of Sumerian-Akkadian bilingual texts. These are partly incantations against evil spirits and diseases or for some magic or apotropaic purpose, and partly lamentations and prayers. Rare are bilingual omens and hemerologies.⁹ These bilingual texts are only in part older Sumerian compositions provided with an Akkadian translation; a number of them seem to have been composed in the first millennium in both languages, with the Akkadian as primary language and the Sumerian version secondary and often reflecting Akkadian syntax and poetic conventions. The interpretation of the bilingual texts therefore depends on the Akkadian version.

The reasons for the creation of these bilingual compositions elude us. It is possible that the exigencies of ritual and magic, in which certain prayers were traditionally recited in Sumerian (by the liturgist) while others were recited in Akkadian (by the patient), necessitated both composing unilingual Sumerian prayers and providing Akkadian ones with a Sumerian version;¹⁰ in the case of laments and the like,¹¹ the reason may have been a revival of some genres from the period of the 'Sumerian renaissance' (c. 1800 B.C.) for a public to whom Sumerian was no longer easily intelligible.

The form of literary texts is normally verse, even though in defining it metre plays an insignificant role compared to other features. The question of the metre of Akkadian poetry has not yet been satisfactorily solved,¹² apart from the prosodic constraint of a trochaic verse-ending (long + short) which is sometimes achieved by apocopating a suffix or resorting to a grammatical form not common in prose. Yet a verse – a line of poetry – has its own characteristics which set it apart from prose.

⁸ A 1161, 256f.

⁹ See n. 124. Also known are bilingual addresses of praise to royal insignia (see A 1135, 57, and A 1131, 40ff), which formed part of the ceremony of 'mouth-washing' of the king.

¹⁰ For example, in the ritual *bīl rimki*; see A 1113, 32.

¹¹ Bilingual texts found at Babylon are published in A 1162. See also A 1065.

¹² A 1084; A 1085; A 1093; A 1175.

These characteristics are reflected both in the way the line is written on the tablet and in the line's content and relation to surrounding lines.

While we are accustomed to recognizing a printed or written poem by the lines of uneven length aligned on the paper, often centred on the page, in the Mesopotamian scribal tradition all writing, whether prose or poetry, always extends to the right margin. Thus a blank space is often left in the middle or toward the end of a line to accommodate the varying numbers and sizes of the units of writing, the cuneiform signs. Conversely, no words are divided from one line to the next.¹³ In poetic texts and even in high-style prose (as opposed, for instance, to private letters), not even larger units, such as phrases or clauses, are broken up, so that each line of writing is to a large extent self-contained. This practice also has the consequence that enjambement – an unexpected lack of coincidence between a syntactic unit and the (metrically defined) line – does not occur as a poetic device in Babylonian poetry.

Often several lines are united into groups set off by horizontal rulings. The smallest unit is a distich; there are other units, which may be considered stanzas, of four or more lines, a commonly used length being the ten-line stanza. While some stanzas indeed correspond to a division of the poem into sub-units, it is often the case that the rulings are for visual orientation only, and represent simple counters, such as often appear in the margin of every tenth line in longer and not exclusively literary compositions, and do not necessarily bear any relation to the articulation of the poem.

A similar visual divider is a blank space in the middle of a line, which should not be regarded as equivalent to a caesura in the classical sense. There is often, however, though not necessarily at the place of the blank, a break in the line, dividing it into two halves – two cola – with a parallel or chiasmic syntactic structure.

It is in fact the building up of semantic units larger than one line or verse that is the most characteristic feature of Akkadian poetry, as it is also of other Semitic poetry such as Hebrew or Ugaritic. However, the characteristic is not necessarily of common Semitic origin; Sumerian poems too are characterized by parallelism between two lines that form a semantic unit, the extreme case being that the second line is the literal repetition of the first, with a proper name replacing, in the second line, the pronoun 'he' or 'she' of the first.¹⁴

¹³ Exceptionally words straddling two lines occur in the late Uruk copy of a diagnostic omen text (A 1110, Tablet xvi); see A 1184, no. 44.

¹⁴ Such parallelism of course also characterizes non-Near Eastern poetry; see J. J. Fox, 'Roman Jakobson and the comparative study of parallelism', in D. Armstrong and C. H. van Schoonereld (eds.) *Roman Jakobson: Echoes of His Scholarship* (Lisse, 1977) 59–90.

Of the formal trappings that we associate with poetry, rhyme is unknown to Mesopotamian poetry. An infrequently but cleverly used feature is the acrostic, which applies to the first sign – the first syllable – of the line. The acrostics are of two types: the initial sign is repeated at the beginning of each line of a stanza (cf. Psalm 119) (even when the sign does not have the same reading in each line, so that the acrostic is mainly for the eye, not the ear), or the initial sign occurs only once; in either case, the first sign of each successive line or stanza is to be read down from top to bottom to yield a phrase or sentence, usually containing the name of the writer, often accompanied by a pious phrase or blessing.

Acrostics may apply not only to the first sign of the line but equally to the last (whence the name *telestich*); as the line on a tablet is laid out much like a line in a printed book, with a justified right margin, the signs constituting the *telestich* also stand in a vertical row. The seven known acrostic poems are listed by R. F. G. Sweet,¹⁵ who also established the fact that the seventh contains a *telestich* as well.

Midway between poetry and prose is the diction of royal inscriptions. Most of the time these do not exhibit any division into line units, and therefore may be considered simply elevated prose. Other royal inscriptions are written as if they were poems, for example Sargon's Eighth Campaign with each line a self-contained clause.

It is especially in the first millennium that royal inscriptions take a literary form. (The annals of Tukulti-Ninurta II, Ashurnasirpal, etc., recount the events of the king's campaign in a pared-down, repetitive form.) Beginning with Sargon II of Assyria the narrative expands to include descriptions of landscapes, foreign customs, and often vivid scenes of confrontation and dialogues. (A forerunner of this type of narrative is the account of the Elamite campaign of Nebuchadrezzar I on a boundary-stone.)¹⁶

Even the syntax and vocabulary of these narratives indicate their *recherché* character. New words appear, usually borrowed from Sumerian, and are especially frequent in Sargon and Sennacherib (*kirimāhu* and other compounds with Sumerian *mah*, *aladlammū*, *piriggallu*, etc.). Rare words that otherwise only occur in learned hymns abound.¹⁷ The king recounts his inmost thoughts and feelings (couched in such terms as 'I said to myself').

The scribes study previous royal inscriptions (from Old Babylonian times) and often quote verbatim from them, especially in the period of antiquarianism in the Neo-Babylonian era, when the royal scribes imitate the sign-forms, the orthographic conventions, and the language of

¹⁵ A 1177A.¹⁶ A 633, no. 6.¹⁷ A 1172.

illustrious royal predecessors from the Old Akkadian or Old Babylonian period,¹⁸ and they compile lists of archaic cuneiform signs, even pictograms.¹⁹

II. NARRATIVE POETRY

1. *Myths and epics*

Among the narrative poems customarily classified as myths and epics,²⁰ the library of Ashurbanipal has preserved substantial parts or fragments of the major compositions. One group of these poems has divine protagonists, and essentially relates their rivalries; the story often culminates in special honour or status attained by some god, and so these poems often serve as aetiologies of the rise of a particular city god – and thus of his city – or purport to give a rationale for some calamity that has befallen men. For example, the myth of Anzu,²¹ attested at Ashur, Nineveh, and Sultantepe, relates how Ninurta defeated the bat-like bird-monster Anzu and recaptured from him the ‘Tablet of Destinies’ that Anzu had stolen from Ellil, and thus reflects the added significance of the cult of Ninurta, whereas in the second-millennium version of the story the hero was Ningirsu. The Descent of Ishtar,²² known from Ashur and Nineveh, and the story of Nergal and Ereshkigal, known from Nineveh, Sultantepe, and Uruk²³ (and in an early and much less elaborate version from El-Amarna), both deal with gods descending to the netherworld, the domain of one of their number, Queen Ereshkigal. The first is a reworking of the Sumerian poem of Inanna’s Descent, possibly to accompany the rites of Dumuzi’s yearly death and return from the netherworld to restore fertility to earth; the second ends with Nergal becoming Ereshkigal’s husband and king of the netherworld, thus explaining how Nergal became associated with the netherworld.

As a counterpart to the descent of gods to the netherworld are the stories of mortals who ascend to heaven, whose heroes are Adapa,²⁴ the first of the Seven Sages, and Etana,²⁵ a legendary shepherd king of Kish. Both these poems, although usually classified as epics, have a humorous tinge, and may be the equivalent of the Middle French genre of *fabliaux*.²⁶ Their interpretation as myths has baffled scholars who have

¹⁸ For bibliography see A 1163.

¹⁹ For example, CT 5, pls. 7–16.

²⁰ For bibliography see A 1093, 26ff. For translations into English see A 44; in French substantial excerpts appear in A 1111. More recent editions with translations are cited under the individual works. See also A 1122 for fragments of Atrahasis, Irra and Anzu.

²¹ A 1092.

²² Edition with bibliography A 41, 95–111; philological commentary, *ibid.*, 143f.

²³ A 1089. A fragment from Uruk is published in A 1096, no. 1. See A 1183, 48ff.

²⁴ Latest edition A 1152.

²⁵ A 1126. Additional texts A 1071; A 1099; A 1110.

²⁶ A 1143.

sought, possibly unnecessarily, to attribute mythological significance to a story that could find its place among Chaucer's tales. Adapa, through his behaviour before the king of heaven, Anu, or following Ea's mischievous advice, misses the opportunity of immortality, and with him so does mankind. Whether this explanation of why men are mortal was the main motif of the story is not certain, since its end is lost. Similarly undecided is the outcome of Etana's flight, on the back of an eagle, to heaven in quest of the plant of birth-giving. This story's parallel in the Alexander romances was noticed long ago.²⁷ Apart from the main motif, the childless Etana's journey heavenward to obtain the herb of birth-giving, the Etana story contains an animal fable of the eagle and the serpent; the tale of Adapa begins with Adapa breaking the wings of the south wind, another fable-like motif. For both these fables there are earlier versions: for Etana from Susa, for Adapa from El-Amarna, but their relation to the first-millennium version is not clear. However, the beginning of the Etana story seems to deal with a rivalry between the supernal gods (Anunnaki) residing in heaven and the gods of lower rank (Igigi) who built the city of Kish, where, according to the Sumerian king list, kingship first descended from heaven.

This is the rivalry that forms the background of the Atrahasis epic, an Old Babylonian composition that is also attested in several fragmentary tablets in the Nineveh library in a recension close to its Old Babylonian original.²⁸ When the Igigi gods, having been made subservient, cast aside their tools and rebel, the god Ea, always ready with stratagems, finds the solution: let the gods create Man, so that Man can take over the burden of labour from the gods. Man is then created by the mother goddess from clay mixed with the flesh and blood of a slain god. However, as mankind multiplies and raises much clamour, the noise becomes irksome to the gods. The gods decide to decimate mankind, by sending first a plague, then a drought, and finally the flood, from which Atrahasis alone, warned by Ea, escapes.

This is the earliest known version of the Flood story: it so closely resembles the one told in the Bible that, when it was discovered in 1872 as part of the Gilgamesh epic, it made Mesopotamian literature famous outside the small circle of Assyriologists. Gilgamesh is still the most appealing work of ancient Near Eastern literature, as it deals with the deepest human concerns: not only the longing for immortality which can only be achieved by enduring fame (as not even Gilgamesh, although two-thirds of divine lineage, can escape death), but also the friendship between Gilgamesh and the semi-savage Enkidu who becomes his

²⁷ M. Lidzbarski, 'Zu den arabischen Alexandergeschichten', *ZA* 8 (1893) 266. See C. Settis-Frugoni, *Historia Alexandri elevati per griphos ad aeternam* (Studi Storici 80-2) (Rome, 1973) 48 n. 119.

²⁸ A 1124. For the first tablet see A 1174. See also A 1122.

companion in his exploits and whose death makes Gilgamesh face the fate that awaits him too. Thus this poem is a rare example of ancient literature that depicts the personal and emotional development – an *éducation sentimentale* – of a hero, with whom the reader can identify, because even this hero, like all humans, loses at the end to fate. The poem ends, as it began, not with the death of a hero but with the description of the ramparts of Uruk built by Gilgamesh; these will be his lasting achievements. In this respect, it singularly resembles the *Iliad*.²⁹ The Gilgamesh epic is also replete with intriguing episodes, many of which are still in a fragmentary state.

Unlike Atrahasis, the Epic of Gilgamesh has undergone standardization and revision so that its library exemplars greatly differ in content and form from the Old Babylonian versions, where these are known.³⁰ A promising area of research in literary history is the study of the changes through which these narrative poems have gone between their early versions (usually Old Babylonian) and their first-millennium versions.

The only well-known narrative poem for which no second-millennium antecedents exist is the Epic of Irra, which seems to have been composed to confront a particular historical situation³¹ and which seeks to give an aetiological explanation for the troubles and epidemics of plague that had befallen Babylon in 765 B.C. Its explanation, attributing the misfortune to the absence of Marduk, Babylon's tutelary god, from his city, is a common motif in royal inscriptions and omen texts, but in them Marduk leaves the city because he is angry with its inhabitants, while here he is provoked by a ruse of the god of the plague, Irra. After having ravaged the city Irra, assuaged by his vizier Ishum, repents and pronounces blessings on Babylonia.

While other stories about the gods hardly ever deal with contemporary concerns, and even when the outcomes of the gods' victories affect mankind they do so in existential terms only, the poem about the Rage of Irra is uniquely and squarely set in the aftermath of a calamity that befell Babylon. A real sense of immediacy thus fills the fourth tablet of the Epic of Irra, a tablet that could be subtitled 'The Destruction of Babylon'. Descriptions of a destroyed city and temple are a common theme of Sumerian lamentations, but they present a static picture of houses in ruin and families decimated. The Irra epic presents the same theme in a dramatic mode, so far without parallel in Babylonian literature.

This composition shows the skill of a poet whose name, exceptionally, appears in the poem, in a unique epilogue describing how the poem was

²⁹ A 1149.

³⁰ Since the edition of R. Campbell Thompson (A 1060), a number of fragments, both Old Babylonian and later, have been identified. All the material known in 1982 has been incorporated in the German translation of A. Schott, revised by W. von Soden, A 1165.

³¹ A 901.

revealed to him in a dream, and how he neither added to nor withheld one line from what was dictated to him. The fiction of divine dictation aside,³² the poet used, it seems, a cycle of texts concerned with the raging of the plague, i.e. Irra, in which the comradeship of Irra and Ishum was celebrated, and created an epic whose central theme was the contrast between the benevolence of Marduk and the wrath of Irra.

The Poem of Creation (*enūma eliš*)³³ is known equally only from first-millennium copies, though internal criteria indicate that it is somewhat older. It too has the common mythological theme of a theomachy – a threat to the gods by a rebellious creature, neither god nor man (thus remaining outside the world order as conceived in the mythology). The poem describes the times before creation and several succeeding generations of gods before the moment of crisis arrives: Tiamat, a salt-water monster, with her husband Kingu and the eleven monsters she has created, threatens the supernal gods, and the gods must find a champion to defeat her. This champion, in the standard version of the poem, is Marduk, who accepts the task on condition that he be made supreme god. Presumably an earlier version had as protagonist the god Ellil, just as later Assyrian versions replace Marduk with the god Ashur. After Marduk kills Tiamat and creates the universe from parts of her body, he is exalted in the divine assembly and given fifty names that are descriptive of his functions and powers. Thus the poem is a mythological tale, a theological justification of Marduk's rise to precedence, and a – somewhat cursory – account of the creation of the world (and mankind) at the same time. It is noteworthy that the creation of heaven and earth, of mountains and rivers, are dealt with in a few (22) lines only, while the creation of the heavenly bodies and their appointment to regulate the calendar is given in much greater detail (in about 44 lines), which attests the Babylonians' preoccupation with the calendar. The final quarter of the poem, that dealing with the fifty names of Marduk and their etymological explanation, is a famous and often-quoted example of Babylonian learning; it moreover received further learned commentaries.

Only in Tablet IV, at the centre of the seven-tablet poem, does the description of the battle between Marduk and Tiamat evoke other

³² A device common in later antiquity, for example in the book of Thessalus of Tralles, who relates how Asclepius appeared to him in his temple of Diospolis (Thebes) and instructed him in iatromathematics, i.e. when and where medicinal plants must be gathered to be efficacious; see H.-V. Friedrich, *Thessalos von Tralles* (Meissenheim am Glan, 1968), and F. Cumont, 'Écrits hermétiques, II: Le médecin Thessalus et les plantes astrales d'Hermès Trismégiste', *Revue de Philologie* 42 (1918) 85–108.

³³ While the forthcoming edition by W. G. Lambert is in preparation the only text edition with translation is A 1109. New translation in A 1111, 36ff. English translation in A 44, 60ff and 501ff.

mythological epics, especially the battle between Ninurta and Anzu in the poem of Anzu.

At some point in history, the longer narrative poems were divided into a number of 'tablets' or 'books' consisting of around 150 lines. This may have happened about the turn of the first millennium, though this is merely a convenient chronological point to which no major historical or cultural events are attached; in fact, the possible dates are either of the two periods of Babylonian history which are characterized in the indigenous or in the Hellenistic tradition as major and eventful reigns, namely that of Nebuchadrezzar I (1125-1104 B.C.)³⁴ or that of Nabonassar (747-734). Later copyists mostly followed these divisions (although for special purposes other divisions may have existed, as with the use of the Erra epic on plague amulets).

The longest narrative poem, the Gilgamesh epic, is divided into twelve 'books'; Anzu into three or four; Irra into five, though the last is barely fifty lines long. Atrahasis is known to have had three tablets in the Old Babylonian version; the first-millennium copies do not preserve colophons. Other, shorter compositions are not known to have been divided into 'books'; these are the Descent of Ishtar, Nergal and Ereshkigal, and most likely Adapa and Etana. There exist other shorter stories, both mythological (Labbu, the Theology of Dunnu, etc.) and secular, the most famous being the recently discovered Tale of the Poor Man of Nippur. It is the first Mesopotamian story whose afterlife can be followed through the Thousand and One Nights and European folklore,³⁵ that is, whose literary connexions have not been solely the Old Testament, as is the case with the Flood story in Gilgamesh (and now also in Atrahasis). To be sure, identity of motifs with other narrative poems has been pointed out, such as the above-mentioned ascent of both Alexander and Etana, each on the back of an eagle; most comparisons between Mesopotamian and classical mythological themes³⁶ fit into categories so universal that direct influence cannot be adduced.

2. Other narratives

While most of the narrative texts discussed so far were composed with some theological purpose in mind – to exalt a particular god, to give an aetiological explanation for the rise of the city, a temple, or a cult – the theological propaganda that lies behind them seems to have meant little to their readers. Influencing the public politically could be more directly achieved through propagandistic literary works, clad in the form of narratives, the allusions of which must have been intelligible to their

³⁴ A 1118.

³⁵ A 1090.

³⁶ J. Fontenrose, *Python: A Study of Delphic Myth and Its Origins* (Berkeley and Los Angeles, 1959).

audience. To this group of texts probably belong some of the historical epics, though it is not possible to tell whether the propaganda they contain originated in the corridors of power – as a legitimization of the ruler's policies – or was directed against them.

Narrative poems with kings as protagonists also exist, though most of them are preserved in fragments only. They are of two types. One has recently been characterized as 'poetic autobiographies' or 'pseudo-autobiographies'.³⁷ What we have is less an 'autobiographical' account of an early king (Shulgi, Sargon) than a poem couched as a first-person narrative that could be styled *res gestae*. If we approach these poems as a genre defined by the fiction of a first-person narrator rather than as defined by that narrator's identity, such as a king or a god, they exhibit a particular structure that justifies uniting them as a genre. To this genre belong, in the first millennium, the so-called Birth Legend of Sargon³⁸ and the Marduk Prophecy,³⁹ both in poetic form, and the prose narrative of the mother of King Nabonidus,⁴⁰ whose service as priestess of the god Sin in Harran bespeaks a West Semitic connexion and links her autobiography to that of Idrimi, king of Alalakh, almost a thousand years earlier.⁴¹

The common formal characteristic of these texts is that they begin with the statement 'I am so-and-so', as opposed to royal inscriptions which begin with a direct address to the god or with a long circumstantial clause introduced by 'When . . .'. After some autobiographical material a central episode is developed; the end is a message to a future king. In the 'Birth Legend of Sargon' the central episode is fragmentary, but seems to deal with the king's accomplishments as favourite of Ishtar; in the autobiography of the mother of Nabonidus, the emphasis is on the reconciliation of the god Sin with Babylon and his choice of Nabonidus to be its ruler, and thus on the legitimization of Nabonidus.

The second type of texts also dealing with an episode of history with a famous king of the past as protagonist, but not necessarily couched in the first person or beginning with 'I am . . .' has been named '*narû* literature'.⁴² The texts also end with a lesson to a future ruler. Their heroes are the kings of the Akkad dynasty, Sargon and Naram-Sin,⁴³ and their composition dates back to the second millennium, although some episodes are preserved in later versions.⁴⁴

Some of these narratives, especially those with a lesson to be drawn for

³⁷ A 1083; the term 'poetic autobiographies' is proposed on p. 8. Grayson proposed the term 'pseudo-autobiography' in A 26 and A 1082, 187. ³⁸ Latest edition A 1128.

³⁹ A 1056.

⁴⁰ Translation, with bibliography, by A. L. Oppenheim in A 44, 56ff. For bibliography concerning the historical implications see A 5 II, 72ff.

⁴¹ A 1166. Recent reinterpretation: A 1067.

⁴² A 1091, 19.

⁴³ A 1094, 25f.

⁴⁴ A 1079; A 1087; A 1091, 65ff; A 1116; A 1138; A 1180, 48.

the ruler, no doubt had political propaganda purposes. While in many cases it is impossible to tell what the situation was that occasioned the composition of such pieces, since the tendentiousness is necessarily disguised, it could be suggested of a few works only that they contain veiled allusions against the misuse of power. Only one of these, the Babylonian Advice to a Prince,⁴⁵ exists in two exemplars; its timeliness is illustrated by a letter written from Babylonia to the king to warn him of the consequences of abolishing the exemptions of the three free cities Sippar, Nippur, and Babylon. The other two, the Vision of the Netherworld and the Verse Account of Nabonidus, have each survived in one exemplar only;⁴⁶ they spell out, just as does Advice to a Prince, a lesson for the king, and in that resemble the *narû* literature, but they are not composed according to the formal constraints prevailing in that genre. These works were composed for the king and the court, in order to influence them, as their 'library' copies and the allusions to them show, and were not, for example, subversive or clandestine literature. They also differ from the propaganda texts emanating from the king's entourage, since the royal inscriptions which could be so classified, and which moreover purport to be factual accounts, are written in prose.

Similarly for the king were composed his own – and not some ancestor's – *res gestae*, which take different forms in Assyria⁴⁷ and in Babylonia.

No doubt for the king's entertainment were composed humorous poems, such as the Tale of the Poor Man of Nippur, as the inclusion of the episode of borrowing a chariot from the king shows.⁴⁸

III. OTHER POETRY

Poetic works without a narrative plot may be classified as hymns, prayers, and magic incantations. Only the last preserve some of the flavour of folk poetry; hymns and prayers are predominantly learned.

Hymnic poetry of the first millennium differs greatly in its formal structure from Old Babylonian hymns. In essence religious, hymns are addressed to gods and goddesses. The genre of temple hymns and hymns to kings, much cultivated in the early second millennium, mostly written in Sumerian,⁴⁹ is hardly represented, with the exception of a hymn to

⁴⁵ The title formerly given to it, 'Fürstenspiegel', makes the connexion between this work and the medieval and oriental genre of *Speculum principis*.

⁴⁶ Advice to a Prince: A 1115, 110–15; see also A 1160. 'A Vision of the Netherworld': translation by E. A. Speiser in A 44, 109–10. A Verse Account of Nabonidus: translation by A. L. Oppenheim in A 44, 312–15. See A 422, 198f; A 1057; A 1173.

⁴⁷ See pp. 209 and 305.

⁴⁸ A 1088. See also A 1066 and A 1090.

⁴⁹ An Old Babylonian hymn to King Gungunum in Akkadian is published as A 1180, 41.

Arba²il and a hymn to the city and temple of Borsippa;⁵⁰ hymns to kings of Assyria, with the exception of a hymn to Ashurbanipal,⁵¹ seem to cluster in the late second millennium.

As opposed to the shorter and more terse Old Babylonian hymns, these later hymns (although their exact date of composition is not known) tend to be long; especially favoured is the hymn of two hundred lines.⁵² Their length immediately suggests that they were not intended for oral performance. The most famous of these is the hymn to Shamash; there is a hymn to Ishtar consisting of 237 lines, and to Nabu of 226 to 232 lines. The 200-verse hymn to Gula is a composition in which the goddess speaks her self-praise, and through this fiction it is related rather to the self-praise of Ishtar and the self-praise of Marduk (for which see below). The two hundred lines of the Shamash hymn can be broken down neither into twenty ten-line stanzas, nor into one hundred distichs; nor can similar divisions be made in the over two hundred lines of the hymns to Nabu, Ishtar, and the queen of Nippur in spite of the rulings in the Ishtar hymn after every tenth line or in the Shamash, Marduk, and Nabu hymns after every second line on the tablet, since these rulings, as mentioned above, are for visual orientation. Nevertheless, the formal device of repetition and parallelism is evident in them, and it is rather these groups of parallel verses that articulate the poems.

The central topic of a hymn is the praise of the god to whom it is addressed; this praise is spoken in the first person by the worshipper, who was no doubt the king for whom the poet composed the work. While it is true that standard and often stereotyped phrases recur in the description of the god's power and mercy, the emphasis on the god's concern toward man as much as the description of his hierarchical position among the gods gives us an insight into the way man's relation to god was conceived.

Nowhere does this appear with more poignancy than in the hymn to Shamash, the sun-god and god of justice *par excellence*. Its message is that justice and fairness are pleasing to Shamash, and dishonesty is abhorrent to him. This ethical message is expounded in a series of vignettes about persons from all walks of life who exemplify just and honest behaviour and are rewarded by Shamash or, conversely, act dishonestly and are punished. This central topic is elaborated in antithetical distichs (or occasionally, longer units); the frame of the poem, an address to Shamash describing his omniscience – as the luminary who sees all – also shows a sophisticated arrangement, as the preamble speaks of Shamash as the sun

⁵⁰ A 1072; A 1104. ⁵¹ A 1181.

⁵² A 1114; also the Shamash hymn A 1115, 121–38; the Ishtar hymn, A 1161; the Nabu hymn, A 1172; the Gula hymn, A 1119; the hymn to the queen of Nippur, A 1123.

which rises ever higher over the land in its daily course, and the end of the poem returns to this cosmic topic, but depicts the functions of the sun-god as regulating the calendar and the seasons. The poem thus deals both with the sun's course over the day and with its course over the year.

The elaborations that such hymns underwent in the first millennium can be observed in the hymn to Ishtar, for which earlier versions are known.⁵³ The late texts retain the articulation of the hymn by a series of refrains (such as 'look on me with favour!' and 'how long yet') and strophes composed of lines all beginning with 'mercy!', but expand both the praise of the goddess and the entreaties of the supplicant by inserting at such places further strophes or lines which conform to the pattern. Characteristic of these hymns is a certain artificial diction, a vocabulary of rare and *recherché* terms, a striving to avoid ordinary or everyday words and phrases.

Similar in style but employing a different poetic fiction are those hymns in which the god or goddess speaks in self-praise. The theme of self-praise (or, as it is sometimes called, self-predication) is a common one in historical texts, in which the king boasts of his achievements and the favour bestowed on him by the gods. It is, however, only in the first millennium that self-praise by the deity enters Akkadian literature – possibly as a sort of revival of earlier Sumerian poetry in which such self-praises are more frequent. The longest and most completely preserved is the self-praise of Gula.⁵⁴ It is, as has been mentioned, one of the 200-verse hymns (divided by rulings which do not follow the internal structure of the poem) in which strophes of Gula's self-presentation as the goddess of a particular city alternate with ones in praise of the god who is her spouse in each of her many manifestations. An unusual feature of the self-praise of the goddess Nanâ is the fact that the first line of each strophe is in Sumerian.⁵⁵ In the rest of the strophe she describes herself under the names by which she is known in various cities of Babylonia.⁵⁶ That other hymns of such self-praise existed can be inferred from the *incipit* cited in the catalogue of songs from Ashur, 'I am the most venerable goddess of all.'⁵⁷ In contrast, the self-praise of the king with which some royal inscriptions begin – as opposed to a hymn to the god to whom the king's pious work is dedicated – although couched in elevated language, is in prose. In prose also are the two self-presentations of Marduk and of Shulgi.⁵⁸ Their depiction of the god Marduk's or the deified king Shulgi's impact on the events of the world is closely related

⁵³ For bibliography and both an Akkadian and a Hittite version from Boğazköy see A 1161.

⁵⁴ Edited in A 1119; a duplicate to lines 101ff is Sm. 1036. A self-praise of Ishtar, incompletely preserved, is A 322, no. 306 + 331. ⁵⁵ A 1156.

⁵⁶ A bilingual 'self-predication' of Inanna-Ishtar begins, similarly, with the goddess enumerating the cities and temples in which she is queen; see A 1076, no. 46, and a duplicate to the first forty lines in A 184, no. 27. ⁵⁷ A 322, no. 158 vi 8 and 10. ⁵⁸ A 1056.

in content and form to the category of texts termed prophecies or oracles, and these in turn have a close affinity to omen texts, as they depict, sometimes in alternation, evil times and blessed times that befall the land. Such texts may in fact have drawn their imagery from omen apodoses, for which see below.

IV. PRAYERS

Prayers have many affinities with hymns, so that often it is a subjective matter in which category to classify a religious poem. Prayers are characterized by greater space and emphasis devoted to the petition, although such a petition for the welfare of the worshipper often appears at the ends of hymns too, and by a certain penitential tone that evokes the psalms of the Bible. They are usually preceded by the Sumerian word *én* (Akkadian *šiptu*), conventionally translated 'incantation', as a sort of title; indeed, many of them functioned in a variety of magic and apotropaic rituals. The purpose or setting of these prayers is usually stated in the subscript, which specifies that it is a 'recitation [*ka.inim.ma*] on the occasion of . . .' Certain motifs are typical of these prayers: the self-presentation of the suppliant; the description of the calamity that distresses him; the appeal to the deity for help; the promise of praise or sacrifice for all future time.⁵⁹ Many such prayers exist in a standard form, with the name of the suppliant left open, so that it can be supplied from case to case. Of those in which the name is filled in, it is often the king's name that appears (from Sargon to Sin-sharra-ishkun).⁶⁰ So it is likely that they were composed for the king, perhaps for a particular occasion, but were also available to private persons seeking the god's mercy and help. While many such prayers consist of stereotyped phrases – partly because such phrases were required by the accompanying ritual – and thus for the modern reader seem repetitious and hackneyed, the form could not have evolved without a basis in personal religiosity and deep emotion such as is reflected in the imagery and diction, as we have learned to appreciate in the penitential psalms of the Old Testament.

It is now known that Sumerian parallels to these prayers exist, although there is no evidence that the Sumerian versions were actually earlier than the Akkadian;⁶¹ they may have been secondarily composed as a counterpart to those Sumerian prayers that were to be recited in the course of various rituals.

Prayers are addressed not only to deities but, in the course of magic operations, to the substances that are used in the performance, such as salt or tamarisk, and to the fire that is used in burning these substances or

⁵⁹ A 1129.

⁶⁰ See A 1129, 54f.

⁶¹ A 1120.

in fumigation. Prayers are also addressed to stars and planets. While some address the astral manifestation of the deity, the main purpose of others is to draw down the celestial power inherent in the celestial body to make the magic operation or its ingredients more efficacious, and similarly to infuse with its power a medication prepared in a certain prescribed way.

The stars – the gods of the night – are also addressed before the performance of an extispicy to ask that a reliable answer be shown through the *exta* of the lamb that will be slaughtered at dawn. Most such late prayers address the gods of divination, Shamash and Adad; there are, however, first-millennium versions of the earlier, Old Babylonian, addresses to the gods of the night. The diviner in solitary vigil while city and countryside around him are in deep sleep is a *topos* that, in spite of the prayer's standard phraseology, lends itself to a lyric tone rare in other prayers.⁶² Comparison of the earlier and later prayers shows that later poets had a predilection for greater elaboration and repetitions, while the Old Babylonian versions show greater restraint.

In some rituals, during the performance of which both the magical expert and the person on whose behalf the ritual is performed recited certain prayers, the professional expert – the exorcist, the lamentation priest, etc. – often has to recite a prayer in Sumerian (which may or may not be provided with an interlinear Akkadian translation), but the lay participant, even if he is the king, recites prayers only in Akkadian. This practice does not tell us much about the survival of Sumerian language, culture, and religion, since most such Sumerian prayers seem to be secondary, that is, translated from the Akkadian, and thus the fact that they are recited in Sumerian may only indicate the preference for a traditional language in a liturgical setting, as is still the case for Latin or Syriac in many Churches today.

V. WISDOM LITERATURE

A special group of learned poetry is known as 'wisdom literature', by analogy with the 'wisdom' books of the Bible. Under this name, however, a variety of types needs to be distinguished. One group, labelled 'precepts and admonitions',⁶³ continues an old Sumerian tradition, whether these admonitions are words of practical wisdom affecting everyday man or warnings given to the king if he does not rule wisely and fairly.⁶⁴ Another group, fables, includes disputations between inanimate things (trees or cereals) or between animals; still another comprises collections of proverbs, usually very difficult to understand

⁶² A 1146.

⁶³ A 1115, 92ff.

⁶⁴ See p. 306.

because of their terse formulation and sometimes riddle-like nature.⁶⁵ All these have Sumerian and Old Babylonian forerunners. While the 'fables' – or rather, disputations between animals and inanimate objects – continue a Sumerian tradition, some rare shorter pieces are closer to the fables known from classical and Oriental literature.⁶⁶

Newly composed, or at least without known earlier material, are the three compositions known as the Poem of the Righteous Sufferer, the Theodicy, and the Dialogue of Pessimism. The first of these is a monologue and the other two are dialogues. Some of the themes of these poems are also found in second-millennium texts, both from Babylonia and from Ras Shamra (Ugarit),⁶⁷ the Old Babylonian in a dialogue form, the Ras Shamra poem in the preserved part containing a monologue only, but possibly containing in the now lost ending an answer to the speaker.

All three poems treat the question of the sufferings that befall a man who believes he does not deserve such a divine punishment, and thus broach the question of the moral problem of the just suffering while the sinner prospers.⁶⁸

The philosophical content – some aspects of which also infuse prayers, especially those which are comparable to the penitential psalms – makes these poems the earliest examples of reflective literature, which in Babylonia manifests itself only as poetry, never as prose, and moreover takes the typical form of 'dramatic monologue' (Nougayrol's term)⁶⁹ or dialogue, since thoughts and deliberations are normally expressed by speaking to oneself and conflicting arguments are usually couched in dialogue form.

Self-expression, then, could naturally take the pattern of this accepted way of communication, direct speech; only instead of addressing an interlocutor or messenger, the speaker addresses himself, introducing his monologue with 'I said to my heart' or the like, or creates a fancied interlocutor, simply designated as 'friend', to express his thoughts and feelings. This friend's role is hardly ever more than to utter a few comforting words. Only the 'Dialogue of Pessimism'⁷⁰ contains a verbal exchange between the servant and his master; for this reason it has been characterized not only as a humorous dialogue⁷¹ but also as the most ancient mime.⁷²

What distinguishes these 'wisdom texts' from other inner monologues or non-fictive dialogues is the artful language and abstruse vocabulary, which makes them difficult of access not only to us but obviously also to the reader they addressed. Both the Righteous Sufferer

⁶⁵ A 1115, chapters. 7-9, pp. 150-279.

⁶⁶ A 1115, 216ff iii 50-4; see A 1054, and A 1177.

⁶⁷ A 1139; A 1142.

⁶⁸ A 1171.

⁶⁹ A 1143.

⁷⁰ A 1115, chapter 6, pp. 139-49.

⁷¹ A 1176.

⁷² A 1095.

and the Theodicy were commented on by Babylonian scholars, thus putting them on a par with other such learned texts as scientific literature (especially omens) and the Poem of Creation.

VI. SECULAR POETRY

Purely lyrical and secular poetry – love songs, awe or pleasure *vis-à-vis* nature, or work songs that according to some are at the origin of poetry – are not found in cuneiform sources. That does not mean that such poems did not exist: there is even a special term for the work song of the ploughman (*alala*); songs like these, however, were not expected to be written down. Descriptions of nature, rare as they are, appear in relations of royal campaigns or in some conjurations.⁷³

As for love poems, we would surmise their existence from catalogues which list the first lines of these poems, for example, 'Darling, I spend the night awake for you'; 'Young man, ever since I beheld you'; 'Away, sleep! I want to embrace my lover'. However, as a recently found complete poem which is listed in this catalogue shows,⁷⁴ this love poetry – possibly all of the poems known to us only from their first lines cited in the catalogue – had its framework, at least as a fiction, in the domain of divine lovers, especially Ishtar and Dumuzi. Whether these songs were reserved for cultic occasions or were attributed to the religious sphere only secondarily (much like the 'Song of Songs') is not known.⁷⁵ Similarly, elegiac poems about the death of a beloved place these emotions in relation to the death of Dumuzi, with the single exception of an Assyrian poem. This elegy, preserved in a single Neo-Assyrian copy, may go back to somewhat earlier, Middle Assyrian times, as some of its linguistic features suggest.⁷⁶ It is a plaint of a dead woman, a woman who died in childbirth, who mourns how death has separated her from the husband she loved, in answer to a question by an unnamed speaker who asks why she drifts about like a boat cast loose. It is the principal metaphor of a ship cast adrift, a *topos* of Sumerian origin but also encountered in Akkadian incantations,⁷⁷ which touches our Western sensibility conditioned by such images in poetry. While a close analysis of the structure of the poem can illuminate its poetic qualities, still there is no poem comparable in Assyrian or Babylonian literature that would help us place this elegy among poetry of its time. Other poetic genres are

⁷³ Personification of nature, expressed in the *topos* of vegetation and watercourses bewailing the death of a friend or family member, is found in the lament of Gilgamesh over Enkidu and in a funerary inscription of an Assyrian king (A 1070, no. 12, and A 1168; see A 1134).

⁷⁴ A 1053.

⁷⁵ A 1121.

⁷⁶ A 1158, 85–93.

⁷⁷ E.g., 'The boat is held fast at the quay of death, the barge is held fast at the quay of suffering'; seeking to bring 'the rope of the boat to the safe mooring place, the rope of the barge to the quay of life'. Cuneiform text in A 1105 III, no. 248 ii 51–2 and ii 58ff.

preserved only embedded in the narrative literature. A lament over the dead is exemplified by Gilgamesh's lament over the dead Enkidu.⁷⁸

The only poetry that may represent a purely secular or folk poetry, that is, poetry in no way dependent on the official cult or the royal court for inspiration, model, or tone, is possibly found embedded in magical and medical texts, as incantations or charms addressing the evil to be exorcised, or tracing the emergence of a certain evil as the end product of the creation of earth and its plants. They are characterized by repetition or concatenation, devices that also characterize folk poetry of other cultures,⁷⁹ though recorded much later. They have been preserved because they became a part of the technical or scientific literature which had its place in royal or scholarly libraries, and thus give us a glimpse of the style of songs that may have been current in the oral literature.

VII. RITUALS

It was also the first millennium that developed, if not the cultic import of long and elaborate rituals that often extend over several days, at least the scrupulous and detailed description of the happenings; the liturgical actions and the pertinent prayers or exorcisms to be recited are enumerated, although these latter may only be cited by their *incipit*. The majority of them, just like the earlier ones, involve the king, again suggesting that those that are not explicitly directed to the king may also have originated in court surroundings and eventually have been made available, or adapted, to private persons.⁸⁰

The most famous is the New Year's ritual,⁸¹ a series of events that took ten days, during which Marduk re-entered his temple in Babylon in a procession, and his son Nabu journeyed there from Borsippa. The ritual reaffirmed the king's mandate to rule. During its celebration the Poem of Creation (*enūma eliš*) was recited, and probably a re-enactment of Marduk's victory over Tiamat described in that poem was performed.⁸²

Rituals also preceded the king's setting out on a campaign – an annual event in Assyria throughout most of its history – or other expedition; a ritual before setting out to cross the desert (*edin.na.dib.bi.da*) may have been available to any traveller.⁸³

Rituals accompanied the digging of the foundations and building of a house, the digging of a well, and other secular activities. The borderline

⁷⁸ A 1134.

⁷⁹ R. Austerlitz, *Ob-Ugric Metrics: The Metrical Structure of Ostyak and Vogul Folk-Poetry* (Helsinki, 1958).

⁸⁰ From second-millennium Babylonia there is only one such ritual text, from Mari; from Assyria, a royal ritual; and from the Hittite empire a number of elaborate rituals, in Hittite.

⁸¹ F. Thureau-Dangin, 'Le rituel des fêtes du nouvel an à Babylone', in A 1178, 127–54.

⁸² A 1117.

⁸³ A 1073; A 1132; A 1179, for which see also A 1061.

between rituals designed to make the undertaking successful and those performed to avert an evil portended by an ominous event, such as an uncommon happening in the household (listed in the omen series *šumma ālu* and *šumma izbu*), is often difficult to draw, since among the *namburbi* rituals (apotropaic rituals designed to ward off such portended evil) may be found some designed to accompany the digging of wells or to secure brisk trade for a tavern.⁸⁴

There are also elaborate rituals specifically related to the cult. Only one ritual is known for building temples,⁸⁵ apart from the narratives in royal inscriptions of the ceremonies accompanying the laying of the first brick (often carried by the king himself or the crown prince) or the preparation of the mortar, which is ceremonially made into an admixture of aromatic herbs and precious stones. A group of rituals deals with consecrating the divine statue. The image of the god has to undergo the 'opening of the mouth' ceremony (preceded by the washing of the statue's mouth), for, so the texts tell us, without it 'the god cannot smell incense, cannot eat bread, or drink water'.⁸⁶

This variety of rituals designed to protect the king against ills portended by signs, or to make the outcome of his enterprise successful (whether campaigns against the enemy or conquests), or to propitiate the gods by dedicating to them sanctuaries, statues, and paraphernalia – this variety, combined with the rise in popularity of such omen categories (astrology, divination from the *exta*) as predominantly deal with portents of public significance, suggest that in the first millennium the royal courts were the *locus* of scholars whose activities centred around the king and his entourage. Their role at the court of Esarhaddon has been elucidated by Parpola,⁸⁷ their internal rivalries by Oppenheim.⁸⁸ The distribution of the evidence does not permit us to decide whether these activities began only under the Sargonids, or whether they can be projected back to Nabonassar and to Babylonia as well as Assyria, and it may of course also distort the picture emerging from the extant textual material, much of which obviously survived in royal or scholarly libraries. Other, non-court-centred activities may never have been recorded in writing, or if so are not so far recovered.

Especially numerous from Seleucid Uruk are texts designed as instructions for rituals. The most important one – the New Year's ritual – was mentioned above; there are also rituals for a particular undertaking: to prepare the *lilissu* drum,⁸⁹ or to avert the consequences of a

⁸⁴ A 1062.

⁸⁵ For bibliography and edition of some of these texts, see A 1055 and A 1184, no. 16.

⁸⁶ A 1070, 120:2 and parallels. An edition of the mouth-washing rituals is being prepared by C. B. F. Walker.

⁸⁷ A 77 *passim*, esp. pp. xiv–xxi and 448ff.

⁸⁸ A 1040.

⁸⁹ A 1178.

lunar eclipse⁹⁰ and to purify the king after such an event.⁹¹ All these rituals are instructions for a particular behaviour, offerings to the gods or spirits; often they not only prescribe prayers to be recited, but also include these prayers among the instructions. They are, therefore, an additional source for our knowledge of prayers and incantations that are otherwise known from prayer collections outside rituals.

The exorcist and the diviner also recite prayers before they set about the performance of their duties; most famous is the 'prayer to the gods of the night'.⁹²

Besides prophylactic rituals, there exist apotropaic rituals against the evil power of demons and sorcerers.⁹³ An array of evil demons – often referred to as the seven evil demons – and malevolent spirits of the dead, who must roam about because they lie unburied or have received no funerary offering, are exorcised with elaborate prayers and incantations. These texts are usually bilingual, Sumerian–Akkadian; they have been serialized in a composition known in Sumerian as *udug.bul* (Akkadian *utukkū lemnūtu*).⁹⁴

Those against sorcerers and sorceresses are collected in a series called *maqlū*, 'Burning',⁹⁵ and involve a nocturnal ceremony in which effigies of the sorcerers are burned or melted in fire. Another collection with a similar name, *šurpu*, 'Burning',⁹⁶ is not directed against any particular external evil power but is conceived as a purification ritual for a man's sins. Whether its duration was one night, like that of *maqlū*, or according to some other disposition, is not certain since the tablet which gives the summary of the directions – the so-called ritual tablet – is not preserved in full, unlike that for *maqlū*. This ritual, after long series of enumerations of the man's possible infractions of divine or moral laws, and of the various evils that in consequence befell him, also ends with the burning of substances that sympathetically represent the man's sins. *Šurpu* ends with a series of prayers in Sumerian addressing the paraphernalia used in the ritual, such as the fire and the date palm branch.

The list of transgressions of *šurpu*, a list that has been dubbed the 'confession of sins', and the prayers that these various exorcistic and magical texts contain make them a source for understanding Babylonian religion as much as prayers and hymns outside such magic settings. The

⁹⁰ BRM 4, no. 6; edited A 1070, no. 24.

⁹¹ See A 1113 and the latest duplicate from Uruk in A 1184, no. 12.

⁹² See p. 310.

⁹³ An edition of the three-tablet series of incantations and rituals against the female demon *Lamashtu* is being prepared by W. Farber to replace the old edition, A 1136.

⁹⁴ Only parts of the series are available in modern editions, e.g., A 1081; previous edition of the then known pieces, A 1059. For bibliography see A 5111, 88f. Some of the bilingual incantations have Sumerian forerunners from the Old Babylonian period; see A 1075.

⁹⁵ Edited, with German translation, A 1130. For analysis of its content and structure see A 1050.

⁹⁶ A 1154.

difference between them seems to be the occasion; apotropaic rituals fall under the competence of the exorcist – and are listed among the handbooks that he is to know in order to exercise his craft⁹⁷ – while the temple singer and other temple personnel propitiate the divinity with cultic acts and recitations that are prescribed in other manuals and collections.

VIII. MEDICINE

Similarly blurred are the distinctions between magic and medicine. While scientific medicine was practised by the same class of experts as various magic rituals, it was couched in that most rigorously scientific form envisaged by the ancients, the omen collection. Omens may be considered scientific because, first, they are based on observation of facts, whether these are changes in the human *milieu* or among the stars in heaven, and more important, because they rigorously exhaust, in the best casuistic manner, all possibilities and variations according to the position and the characteristic, such as colour, direction, and the like, of the phenomenon observed. One such class of phenomena, the appearance and behaviour of a sick person, fell under the competence of the *āšipu*, and his diagnosis was couched in the form of omens, with the description of the symptom constituting the protasis, and the prognosis the apodosis. These are the diagnostic omens, of which we have one small piece from the Middle Babylonian period.⁹⁸ They differ from the medical texts proper in that they do not prescribe, but only diagnose the disease and predict its outcome or, in the case of pregnant women, the viability and sex of the child. These texts served the *āšipu* who observed the patient and also derived his prognosis from ominous events encountered on the way to the patient's house; these were of the nature enumerated in the *šumma ālu* series, to which it may have been an appendix.

The *āšipu* was not the expert who treated the sick person; that task fell to the medical practitioner, the *asû*, who had at his disposal a set of therapeutic handbooks whose chapters dealt with diseases affecting a particular part of the body.⁹⁹

Just as the diagnostic omens are arranged in a sequence from 'top to toe', *lit.* 'the crown of the head to the nails [of the feet]' (*ultu muhhi adi*

⁹⁷ This is the 'exorcist's handbook', A 322 no. 44; see A 1058.

⁹⁸ PBS 2/2 104. The canonical series was edited by R. Labat, A 1110. Of the new material excavated or identified subsequently, note especially the catalogue published in A 1098 and the commentaries from Uruk published in A 1096, nos. 27–42.

⁹⁹ An overview, with bibliographical notes, is found in A 1148, 643f. See also A 1052.

supri),¹⁰⁰ so the therapeutic books also seem to have been arranged in a similar sequence.¹⁰¹

These medical handbooks are structured much as the Greek ones are, comprising the description of the symptoms of the illness (the indication) and the prescription of the appropriate remedy, describing both the substances to be used and the manner of preparing and administering them to the patient.¹⁰² They would provide invaluable information about the history of medicine, were it not for the fact that many of the plants and other substances entering into the medication cannot be identified with certainty, and even the terms describing the ailment are often imperfectly understood.

The medical practitioner was, however, not only physician and, most likely, his own pharmacist or herbalist as well, but also knowledgeable in such religious and ritual matters as were necessary to make his cure efficacious. Indeed, these therapeutic texts are interspersed with prayers and invocations to the gods¹⁰³ and, even more strikingly, with prayers and rituals (including the confection of amulets) involving the celestial bodies, thus indicating that Hellenistic iatromathematics, that is, the use of astrology in medical treatment, had its precursor in Mesopotamia.¹⁰⁴

A special subsection of both the diagnostic and the therapeutic handbooks was devoted to gynaecology, the former predicting the outcome of pregnancy as well as dealing with the diagnosis of infants, the latter concerned not only with obstetrics but also with treating sterility, and including tests for pregnancy.¹⁰⁵

To this corpus of medical lore belong also the pharmaceutical handbooks: the series *uruanna*,¹⁰⁶ a two-column list of therapeutic herbs, minerals, and even fats and other substances that can enter a prescription, giving either their equivalents in Akkadian if the name of the substance is foreign – Sumerian, or from another foreign language such as ‘Subarian’ (probably Hurrian) and Elamite – or the equivalent substances that may be substituted for them. Other handbooks, *šammu*

¹⁰⁰ Not from ‘head to toe’, just as the Hippocratic books also deal with remedies for diseases starting with the ‘crown of the head’; see Paulus Aegineta, *Preface*, translated by Francis Adams (1844) I, p. xix.

¹⁰¹ Several medical texts have been edited by R. Campbell Thompson in *Proceedings of the Royal Society of Medicine* 17 (1924) and 19 (1926), *JRAS* (1937), *AJSL* 47 (1930), etc.; a new edition to replace the incomplete and partially outdated previous editions is expected from F. Köcher in the series *Die babylonische-assyrische Medizin*. For a brief overview, with bibliography, see A 1101.

¹⁰² D. Goltz, *Studien zur altorientalischen und griechischen Heilkunde: Therapie – Arzneibereitung – Rezeptstruktur* (Sudhoffs Archiv Beiheft 16) (Wiesbaden, 1974).

¹⁰³ In certain medical texts the disease itself, or the evil power thought to be at its root, is addressed.

¹⁰⁴ A 1159.

¹⁰⁵ A 1077; A 1157.

¹⁰⁶ An edition is being prepared by F. Köcher.

šikinšu and *abnu šikinšu*, give more detailed descriptions of the vegetable or mineral substance,¹⁰⁷ often in terms of other plants and stones just like the Hellenistic and medieval alchemical handbooks, and also indicate the ailment for which they are suitable.

IX. SCHOLARLY LITERATURE

Scholarly and scientific activity, to which the above-mentioned lists of plants, and other descriptions of plants and animals, belong, is also manifested in a large number of scholia, commenting both on scientific texts and on difficult literary texts. Among literary texts, commentaries are made on texts of religious or theological complexity, such as the Poem of Creation, and on texts which are written in an erudite language, replete with rare words, such as the 'Righteous Sufferer' and the 'Theodicy'. The scholarly texts commented on are the omens, *maqlû*, *šurpu*, and medical texts. No commentaries exist on narrative texts (such as epics), nor on hymns and prayers. Lexical lists that originated in the second millennium to provide equations of Sumerian and Akkadian words – either to provide glosses for the no-longer intelligible Sumerian literature and vocabulary, or to teach Sumerian to the Akkadian-speaking scribes – continued to be copied and expanded in the first millennium,¹⁰⁸ and additional types of lexical lists were created: a type called group vocabularies¹⁰⁹ that list words in groups of homonyms or synonyms, and the so-called synonym lists¹¹⁰ that give common equivalents to rare or foreign, mostly West Semitic, words. Moreover, the old lexical lists were provided with commentaries; the two major types of commentaries are those adding a third column with more recent or more common Akkadian words to the existing two-column Sumerian–Akkadian word list (HAR-gud),¹¹¹ and more elaborate scholia that not only add further Akkadian equivalents to the Sumerian–Akkadian lists, but also explain them in terms of etymology, real or fancied, or provide a set of terms that furnish the link, again correct or fictitious, between two terms that figure as equivalents in the original list.¹¹²

Similar scholia – arranged as either a simple list of equations or, more elaborate, adducing an explanation for the equation – were compiled for other scientific texts, such as medical texts¹¹³ and above all omens (liver

¹⁰⁷ No complete edition of the various fragments is available. Excerpts from *šammu šikinšu* are quoted in A 1102 and A 1153; from *abnu šikinšu* in A 1125, 152ff.

¹⁰⁸ See, for example, the remarks of M. Civil in *MSL* 14, 160ff.

¹⁰⁹ See I. L. Finkel, *MSL* 16, 4f and 23ff; A. Cavigneaux, *MSL* 17, 1f; and M. T. Roth, *MSL* 17, 127ff.

¹¹⁰ Parts of synonym lists are edited in A 1097 and A 1167.

¹¹¹ They are edited, along with the Sumerian–Akkadian HAR-ra vocabularies, in *MSL* vols.

4–12. ¹¹² For example, the commentaries to Aa, see M. Civil, *MSL* 14, 158–60.

¹¹³ A good example is the commentary 11N–r3, edited in A 1064.

omens, diagnostic omens, *šumma ālu*, and *šumma iṣbu*.¹¹⁴ Commentaries to celestial omens often go beyond lexical equations and explain phenomena listed in the omen's protasis in terms of other phenomena; for example, a protasis referring to a certain star is repeated with one of the planets replacing the star.¹¹⁵ Such commentaries may contain the comment only, or both the citation of the passage commented on and its explanation; in the latter case they help to reconstruct such scholarly texts, if the original uncommented version does not happen to be preserved, and in the former they at least establish the sequence of the original version.

X. OMENS

Omens, observable on earth and in the sky, as the texts state,¹¹⁶ may occur spontaneously or may be provoked. Among the spontaneously occurring signs are those that appear in a house, in a field, or in the behaviour of animals or humans, which are collected in *šumma ālu* (over one hundred tablets);¹¹⁷ signs which derive from monstrous births of animals or humans (*šumma iṣbu*, twenty-four tablets);¹¹⁸ characteristics of moles and similar marks on a person (the physiognomic omen series *šumma alamdimmu*);¹¹⁹ dreams;¹²⁰ and the symptoms and behaviour of a sick man (the diagnostic omen series *enūma ana bīt marši*, forty(?) tablets).¹²¹ Especially developed in the first millennium are omens from signs observed in the sky: eclipses of sun or moon, the conjunctions of heavenly bodies, and the like (*Enūma Anu Enlil*, seventy tablets).¹²² Celestial omens in Old Babylonian are rare, and seem to deal with lunar eclipses only. A few *šumma ālu* type omens are also attested in the Old Babylonian period.¹²³ Even though omens are not known in Sumerian, a

¹¹⁴ The commentary to *šumma iṣbu* is edited following the text of the same series in A 1127; a duplicate to lines 284–392 (Tablets VIII–XII) is A 1184, no. 37. No systematic edition is available for other types of omens; the commentaries published in autograph copy in CT 41 have been edited, along with five other texts published elsewhere, by R. Labat, A 1108. A commentary on the first tablet of the diagnostic omens is published in A 1068 (see also the remarks of A. Cavigneaux in A 1063), and several commentaries to this series are published in A 1096, nos. 27–33, 36, 38–42. Commentaries to various medical texts are published *ibid.*, nos. 47, 49–55; to various omen texts *ibid.*, nos. 72, 77–8, 81, 83–4, and 90. A commentary to *šumma ālu* is published in A 1184, no. 36. Other commentaries are scattered in various journals.

¹¹⁵ See D. Pingree, A 1043, 20 §2.2.8.2.

¹¹⁶ 'The signs in the sky just as those on the earth give us signals.' A 1147, 203:24.

¹¹⁷ The partial edition A 1137, is expected to be replaced by a complete new edition; see A 1133.

¹¹⁸ A 1127. ¹¹⁹ Cuneiform texts, with introduction and glossary, A 1107; see also A 1106.

¹²⁰ A 1145.

¹²¹ A 1110; new material in A 1096, nos. 27–42.

¹²² For the time being, see the texts edited in A 1042 and A 1043; A 1164. The texts pertaining to the first fifty tablets of the series were organized, but not edited, by E. F. Weidner, A 1182. For a brief description of the organization and content of this compendium see A 1148, 643f. ¹²³ A 1103.

few late tablets contain bilingual (Sumerian–Akkadian) omens,¹²⁴ both of the *šumma ālu* type, and celestial omens.

Of the provoked omens, those based on the configurations of oil poured on water (lecanomancy),¹²⁵ or the smoke from a censer (libanomancy),¹²⁶ while still occasionally copied in the first millennium, have largely gone out of fashion and practice. In their stead some novel practices may have been introduced, of which only a few testimonies survive, such as psephomancy (throwing dice), incubation dreams, sprinkling an ox with water and observing its movements, and waiting, after the appropriate ritual, for a shooting star, so as to derive a prediction from its direction.¹²⁷ In continuous favour, in fact as far as we know the only divination that had its origin in Sumer, is extispicy, divination from the entrails (mostly the liver and gall bladder, but also the lungs) of a lamb slaughtered for that purpose. The huge collection of liver omens with the pertinent commentaries has not yet been organized and edited in full; it must have been as large as or larger than *šumma ālu*. Not only are its omens provoked, but the diviner expressly beseeches the gods of divination, Shamash and Adad, to put a favourable sign in the entrails of the lamb. Both the liver omen and the celestial omen collections seem to have been in a continuous state of expansion up to the end of cuneiform literacy, which is perhaps the reason why it is often impossible to assign a particular text to its proper place in the compendium, and both kept being commented upon and excerpted so that perhaps there never was a canonical version, such as we have for, e.g., *šumma izbu* or the diagnostic series.

There is also a manual for the use of the diviner, which gives the rationale for the interconnexions between observable phenomena (on the earth and in the sky) and the interpretations to be derived from them.¹²⁸

XI. HEMEROLOGIES

Hemerologies list the favourable and unfavourable days and the permitted or forbidden activities. Several types are known: listing each consecutive day of the month, with either a short indication ‘favourable’

¹²⁴ A 1096, no. 85 (*šumma ālu*). Bilingual celestial omens are cited in excerpt in A 1043: from K 2241 + p. 40 note to III 6c, III 11b, xv 5, xvi 11, xvii 8; from K 8634, p. 36 ad II 3; from 82–3–23, 120, p. 77 ad xvii 8. Other unpublished bilingual omen texts are K 2286, K 8261, K 11573, K 14036 + Sm. 154. For a bilingual hemerology see A 1086, no. 28, and B. Landsberger, *MSL* 9, 107ff.

¹²⁵ A 1150.

¹²⁶ A 1151; A 1078. See also R. D. Biggs, *RA* 63 (1969) 73–4. Another omen text deriving prognoses from incense is published in A 1140.

¹²⁷ A 1155.

¹²⁸ A 1147.

or 'unfavourable'; listing each consecutive day and the prescriptions and proscriptions for it; listing only the favourable days with prescriptions; under each month, listing the favourable days; listing the same in tabular form.¹²⁹

¹²⁹ A typology and a list of the hemerological texts with bibliography is given by A 1112.

BIBLIOGRAPHY

Abbreviations

- AAAS *Annales archéologiques arabes syriennes*
 AASF *Annales Academiae Scientiarum Fennicae*
 AASOR *Annual of the American Schools of Oriental Research*
Acta ant. Hung. *Acta antiqua Academiae scientiarum Hungaricae*
Acta arch. Hung. *Acta archaeologica Academiae scientiarum Hungaricae*
 ADAJ *Annual of the Department of Antiquities of Jordan*
 AEA *Archivo Español de Arqueología*
 AfK *Archiv für Keilschriftforschung*
 AfO (Bh.) *Archiv für Orientforschung* (Beiheft)
 AIU *Arkheologicheskie Issledovaniya na Ukraine* (Kiev)
 AION *Annali dell' Istituto Universitario Orientale di Napoli*
 AJA *American Journal of Archaeology*
 AJSL *American Journal of Semitic Languages and Literatures*
 AK *Arkheologiya, Kiev*
 AMI *Archäologische Mitteilungen aus Iran*
Anat. Stud. *Anatolian Studies*
Ann. Serv. *Annales du Service des Antiquités de l'Égypte*
 An. Or. *Analecta Orientalia*
 AO *Arkheologicheskie Otkritiya*
 AOAT (S) *Alter Orient und Altes Testament* (Sonderreihe)
 AOF *Altorientalische Forschungen*
 AOS *American Oriental Series*
 AP *Arkheologichni Pamiatky, Kiev*
Arch. Anz. *Archäologischer Anzeiger*
Ar. Or. *Archiv Orientalni*
 AS *Assyriological Studies* (Chicago)
 ASOR *American Schools of Oriental Research*
 AUM *Andrews University Monographs*
 AUSS *Andrews University Seminary Studies*
 AV *Authorized Version of the Bible*
Baghd. Mitt. *Baghdader Mitteilungen*
 BAM *Bulletin d'archéologie marocaine*
 BAR *Biblical Archaeologist Reader*
 BASOR *Bulletin of the American Schools of Oriental Research*

- BCH *Bulletin de correspondance hellénique*
 BE Babylonian Expedition of the University of Pennsylvania, Series A:
 Cuneiform Texts
 BLA *Bulletin of the Institute of Archaeology*, University of London
 Bi. Ar. *The Biblical Archaeologist*
 BIFAO *Bulletin de l'Institut français d'archéologie orientale*
 Bi. Mes. *Bibliotheca Mesopotamica*
 Bi. Or. *Bibliotheca Orientalis*
 BMFA *Bulletin of the Museum of Fine Arts*, Boston
 BM Quart. *British Museum Quarterly*
 Boll. d'Arte *Bollettino d'Arte*
 BRM Babylonian records in the library of J. Pierpont Morgan
 BSA *Annual of the British School of Archaeology at Athens*
 BSOAS *Bulletin of the School of Oriental and African Studies*
 BSR *Papers of the British School at Rome*
 Bull. Inst. Arch. Bulg. *Bulletin d'Institut archéologique, Académie bulgare des sciences*
 Bull. Inst. fr. Caire *Bulletin de l'Institut français d'archéologie orientale, Le Caire*
 Bull. MB *Bulletin du Musée de Beyrouth*
 Bull. Soc. Ling. *Bulletin de la Société de linguistique de Paris*
 CAD *Chicago Assyrian Dictionary*
 CAH *The Cambridge Ancient History*
 CBQ *Catholic Bible Quarterly*
 CG *Catalogue général des antiquités Égyptiennes du Musée du Caire*
 Chron. d'Eg. *Chronique d'Égypte*
 CIS *Corpus Inscriptionum Semiticarum*
 CIWA Rawlinson, H. C. *The Cuneiform Inscriptions of Western Asia* I-V.
 London, 1861-84
 CRAI *Comptes-rendus de l'Académie des inscriptions et belles-lettres*
 CRRA *Compte-rendu de la . . . rencontre assyriologique internationale*
 CSCA *California Studies in Classical Antiquity*
 CT *Cuneiform Texts from Babylonian Tablets in the British Museum*
 CTN *Cuneiform Texts from Nimrud*
 EI *Eretz Israel*
 Eos *Commentarii Societatis philologiae Polonorum*
 ESA *Eurasia Septentrionalis Antiqua*
 FGh *Fragmenta der griechischen Historiker*, F. Jacoby, Berlin, 1922-
 GM *Göttinger Miszellen, Beiträge zur ägyptologischen Diskussion*, Göttingen
 HSS *Harvard Semitic Series*
 HTR *Harvard Theological Review*
 HUCA *Hebrew Union College Annual*
 ICC *International Critical Commentary*
 IEJ *Israel Exploration Journal*
 IFAO *Institut français d'archéologie orientale*
 Ir. Ant. *Iranica Antiqua*
 JA *Journal asiatique*
 JANES *Journal of the Ancient Near Eastern Society*

- JAOS *Journal of the American Oriental Society*
 JARCE *Journal of the American Research Center in Egypt*
 JBL *Journal of Biblical Literature*
 JCS *Journal of Cuneiform Studies*
 JDAI *Jahrbuch des deutschen archäologischen Instituts*
 JEA *Journal of Egyptian Archaeology*
 JEOL *Jaarbericht van het Voorasiatich-Egyptisch Genootschap 'Ex Oriente Lux'*
 JESHO *Journal of Economic and Social History of the Orient*
 JHS *Journal of Hellenic Studies*
 JKF *Jahrbuch für kleinasiatische Forschung*
 JNES *Journal of Near Eastern Studies*
 JPEK *Jahrbuch für prähistorische und ethnographische Kunst*
 JRAS *Journal of the Royal Asiatic Society*
 JRGZM *Jahrbuch des Römisch-Germanischen Zentralmuseums, Mainz*
 JSS *Journal of Semitic Studies*
 JSSEA *Journal of the Society for the Study of Egyptian Antiquities, Toronto*
 JTS *Journal of Theological Studies*
 JTVI *Journal of the Transactions of the Victoria Institute*
 KB *Keilschriftliche Bibliothek*
 KSIK *Kratkie Soobshcheniya Instituta Arkheologii, Kiev*
 KSIAM *Kratkie Soobshcheniya Instituta Arkheologii AN SSSR, Moscow*
 KSIIMK *Kratkie Soobshcheniya Instituta Istorii Materialnoy Kultury, Moscow*
 LAAA *Liverpool Annals of Archaeology and Anthropology*
 LAPO *Littératures anciennes du Proche-Orient*
 Ling. Balk. *Linguistique balkanique*
 L-S-J *Greek-English Lexicon*, H. G. Liddell and R. Scott, rev. H. S. Jones,
 with Supplement, Oxford, 1968
 MAOG *Mitteilungen der altorientalischen Gesellschaft*
 MAPP *Materialy z Arkheologii Pivnichnoho Prichornomoria, Odessa*
 MDAIK *Mitteilungen des deutschen archäologischen Instituts für ägyptische
 Altertumskunde in Kairo*
 MDOG *Mitteilungen der Deutschen Orient-Gesellschaft*
 MDP *Mémoires de la Délégation en Perse*
 MEFR *Mélanges d'archéologie et d'histoire de l'Ecole française de Rome*
 Mém. inst. fr. Caire *Mémoires publiés par les membres de l'Institut français
 d'archéologie orientale du Caire*
 MIA *Materialy i Issledovaniya po Arkheologii SSSR*
 MIO *Mitteilungen des Instituts für Orientforschung*
 M-L *Meiggs, R. and Lewis, D. M. A Selection of Greek Historical Inscriptions
 to the End of the Fifth Century B.C. Oxford, 1969*
 MM *Madrider Mitteilungen*
 MMJ *Metropolitan Museum Journal*
 Mon. Ant. *Monumenti Antichi*
 MSL *Materialien zum Sumerischen Lexicon*
 MVAG *Mitteilungen der Vorderasiatisch-Aegyptischen Gesellschaft*
 Nachr. Göttingen *Nachrichten von der Akademie der Wissenschaften in Göttingen*
 NEB *New English Bible*

- NICOT The New International Commentary on the Old Testament
Not. Scav. Notizie degli Scavi di Antichità, annexe to *Atti della Accademia Nazionale dei Lincei*, Rome
- Num. Chron. Numismatic Chronicle*
- OECT Oxford Editions of Cuneiform Texts
- OIC Oriental Institute Communications
- OIP Oriental Institute Publications
- OLZ *Orientalistische Literaturzeitung*
- Or. Orientalia*
- Or. Ant. Oriens Antiquus*
- PAPS *Proceedings of the American Philosophical Society, Philadelphia*
- PBS The University Museum Publications of the Babylonian Section
- PCPhS *Proceedings of the Cambridge Philological Society*
- PEF *Quarterly Statement of the Palestine Exploration Fund*
- PEQ *Palestine Exploration Quarterly*
- PPS *Proceedings of the Prehistoric Society*
- PSBA *Proceedings of the Society of Biblical Archaeology*
- P-W Pauly-Wissowa-Kroll-Mittelhaus, *Real-Encyclopädie der klassischen Altertumswissenschaft*, Stuttgart, 1893-
- QDAP *Quarterly of the Department of Antiquities of Palestine*
- RA *Revue d'assyriologie et d'archéologie orientale*
- Rec. Trav. Recueil de travaux relatifs à la philologie et l'archéologie égyptiennes et assyriennes*
- Rendic. Acc. Lincei Rendiconti della Accademia nazionale dei Lincei*
- Rend. Ist. Lombardo Rendiconti del r. Istituto Lombardo di scienze e lettere*
- RES *Répertoire d'Épigraphie Sémitique*
- Rev. Arch. Revue archéologique*
- Rev. Arch. Bib. Mus. Revista de archivos, bibliothecas y museos*
- Rev. Bibl. Revue biblique*
- Rev. d'égyptol. Revue d'égyptologie*
- Rev. de Philol. Revue de philologie, de littérature et d'histoire anciennes*
- RHA *Revue hittite et asianique*
- RIDA *Revue internationale des droits de l'Antiquité*
- Rom. Mitt. Römische Mitteilungen. Mitteilungen des deutschen archäologischen Instituts, römische Abteilung*
- RSF *Rivista di Studi Fenici*
- RSO *Rivista degli Studi orientali*
- RSV Revised Standard Version of the Bible
- RV Revised Version of the Bible
- SA *Sovetskaya Arkheologiya*
- SAI *Arkheologiya SSSR. Svod Arkheologicheskikh Istochnikov*
- SAK *Studien zur altägyptischen Kultur*
- SANE Sources from the Ancient Near East
- Stud. Etr. Studi Etruschi*
- TAM *Tituli Asiae Minoris*
- TB *Tyndale Bulletin*
- TCL *Textes cunéiformes du Louvre*

- TCS Texts from Cuneiform Sources
 TIM Texts in the Iraq Museum
 UE(T) Ur Excavations (Texts)
 UF *Ugarit-Forschungen*
 UVB *Vorläufiger Bericht über die . . . Ausgrabungen in Uruk-Warka*
 VAB Vorderasiatische Bibliothek
 VAS Vorderasiatische Schriftdenkmäler
 VDI *Vestnik drevnei istorii*
 VSSA *Voprosy Skifo-Sarmatskoy Arkheologii*, ed. D. B. Shelov, Moscow, 1954
 VT (Supp.) *Vetus Testamentum* (Supplements)
 We. Or. *Die Welt des Orients*
 WHJP *World History of the Jewish People*
 WTJ *Westminster Theological Journal*
 WVD OG Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft
 WZKM *Wiener Zeitschrift für die Kunde des Morgenlandes*
 YNER Yale Near Eastern Researches
 YOS (R) Yale Oriental Series (Researches)
 ZA *Zeitschrift für Assyriologie*
 ZÄS *Zeitschrift für ägyptische Sprache und Altertumskunde*
 ZAW (Bh.) *Zeitschrift für die alttestamentliche Wissenschaft* (Beiheft)
 ZDMG *Zeitschrift der deutschen morgenländischen Gesellschaft*
 ZDPV *Zeitschrift des deutschen Palästina-Vereins*
 ZPE *Zeitschrift für Papyrologie und Epigraphik*

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